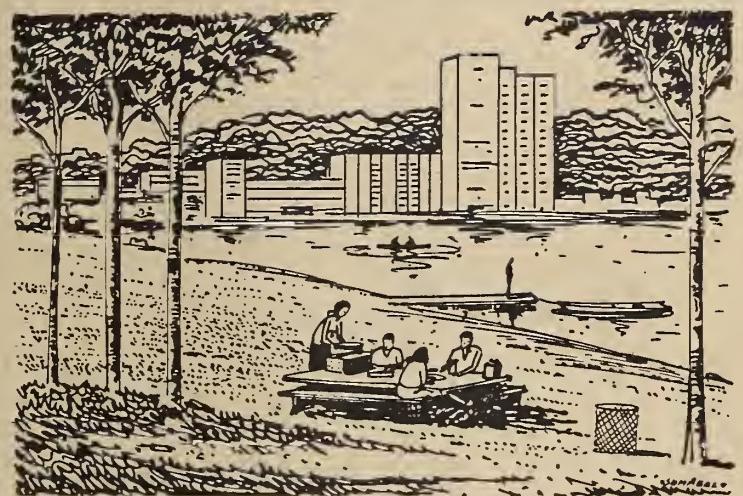
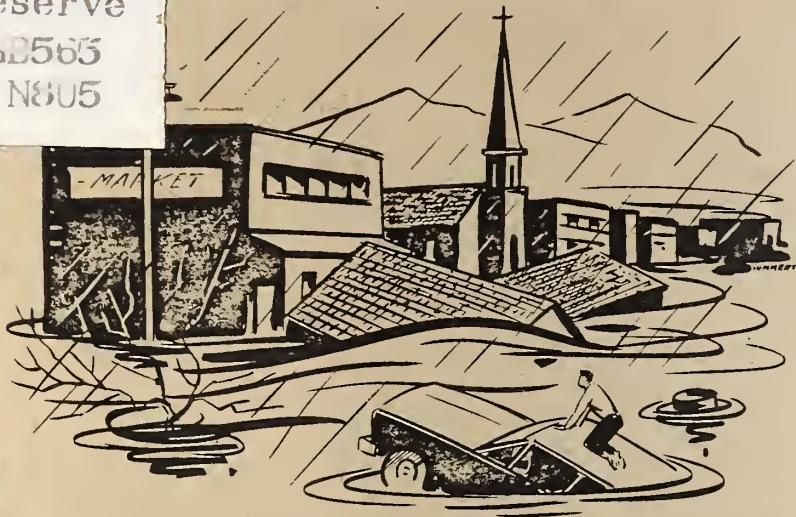


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Do not assume content reflects current scientific knowledge, policies, or practices.

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Clarks Creek Flood Plain Study

Catawba County, North Carolina

Prepared by

UNITED STATES DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

In cooperation with

THE NORTH CAROLINA DEPARTMENT OF NATURAL AND ECONOMIC RESOURCES
CATAWBA COUNTY SOIL AND WATER CONSERVATION DISTRICT
and
CATAWBA COUNTY

October 1975

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CLARKS CREEK FLOOD PLAIN STUDY

CATAWBA COUNTY, NORTH CAROLINA

Prepared By

United States Department of Agriculture

Soil Conservation Service

Raleigh, North Carolina

In Cooperation

With

North Carolina Department of Natural and Economic Resources

Catawba County Soil and Water Conservation District

and

Catawba County

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October 1975



INDEX

	<u>Page</u>
INTRODUCTION	1
PURPOSE AND OBJECTIVES	2
LOCATION AND IDENTIFICATION OF THE STUDY AREA	2
TECHNICAL PROCEDURES	4
MAPS AND PROFILES.	6
INTERPRETATION FOR USE OF REPORT	6

APPENDICES

- Appendix A - Maps
- Appendix B - Profiles

CLARKS CREEK FLOOD PLAIN STUDY

INTRODUCTION

The Clarks Creek Flood Plain Study was prepared in accordance with a Plan of Study for Flood Plain Study, dated June 1973. The study area, location, scope, study responsibility, estimated costs, funding arrangements, and tentative schedules were agreed to prior to initiation of the study.

This flood plain study was requested by Catawba County, the study sponsor. The Catawba County Soil and Water Conservation District endorsed the request and the North Carolina Department of Natural and Economic Resources approved the request and established the priority for the study in accordance with Joint Coordination Agreement for Flood Hazard Analysis and Flood Plain Studies between the State of North Carolina and the Soil Conservation Service, U. S. Department of Agriculture.

The Soil Conservation Service conducts flood hazard analyses under the authority of Section 6 of Public Law 83-566, in response to Recommendation 9(c), "Regulation of Land Use," of House Document No. 465, 89th Congress, 2nd Session, and in compliance with Executive Order 11296, dated August 10, 1966.

The Service has the responsibility for developing the technical data required to accurately define the limits of flooding for the agreed on storms and for the technical data required to determine floodway limits. The sponsoring local organization, however, has the responsibility for delineating the floodway based on the technical data furnished by the Soil Conservation Service. The delineation of the floodway is controlled by the Floodway Regulation Law, G. S. 143-215.51-.61, and General Statutes, G. S. 143-215.52(2) and G. S. 143-215.53.

The study was funded jointly by federal river basin funds, funds from the North Carolina Department of Natural and Economic Resources, and funds from Catawba County.

PURPOSE AND OBJECTIVES

This study was made to provide the necessary data for planners to make sound land use decisions for that land under their influence which is subject to flooding. It is not the intent of this report to offer solutions to flood problems in the study area, but rather to identify those areas which are subject to flooding so that they might be developed to land uses which are compatible with its tendency to flood.

The Clarks Creek Flood Plain Study was prepared for a rapidly urbanizing area. This area is undergoing a sharp change from predominantly rural setting to one of small urban centers whose boundaries are spreading until they join each other. If the growth in this area is allowed to develop without the flood hazard information published in this report for guidance, there will be areas developed that will be flooded at frequent intervals. However, with the delineation of the flood hazard areas in this report, the county officials will have the necessary data to guide their land use controls so that development within the flood prone areas can be controlled.

LOCATION AND IDENTIFICATION OF THE STUDY AREA

Clarks Creek is located in the west central Piedmont Plateau of North Carolina. Clarks Creek, with its headwaters in the suburbs of Hickory, flows south through Lincolnton, North Carolina to its embouchure at the South Fork River, a part of the Santee River Basin. The study area, being in the Piedmont Plateau, is characterized by rolling to gently rolling topography in the uplands and rather broad, flat flood plain adjacent to the streams. Steep, precipitous slopes are few. Elevations range from 1,175 feet above mean sea level at Hickory to about 760 feet above sea level at the confluence with the South Fork River at Lincolton, North Carolina.

According to the data from the weather station at Hickory in the northern part of the study area, the average annual precipitation is 49

inches. The average temperature ranges from about 41 degrees Fahrenheit in January to around 77 degrees Fahrenheit in July, with an average annual temperature of approximately 60 degrees Fahrenheit. The average freeze-free period extends from the first week of April to the first week of November.

The study area, that portion of the Clarks Creek Watershed in Catawba County, has a drainage area of approximately 65 square miles or 41,600 acres. Portions of the cities of Hickory, Conover, Maiden and Newton are within the study area, making it one of the most densely populated areas in the Piedmont.

Urban and commercial development are estimated at 20 and 25 percent of the watershed. The majority of the area is cropland, pastureland, and woodland.

Flood hazard areas are identified for a total of about 36 miles of streams in the study area and are shown on the Flood Hazard Analysis Index Map. Those streams included in the study and the lengths studied are shown in the following table.

<u>Stream</u>	<u>Length Studies</u>
	Miles
Clarks Creek Main	15
Clarks Creek Tributaries	
Trib "c"	0.5
Cline Creek	1.3
Anthony Creek	1.0
Smyre Creek	2.2
Town Creek	1.2
Bili Creek	1.3
Betts Creek	2.2
Pinch Gut Creek	3.1
Maiden Creek	5.2
Allen Creek	2.0
Holly Branch	0.9

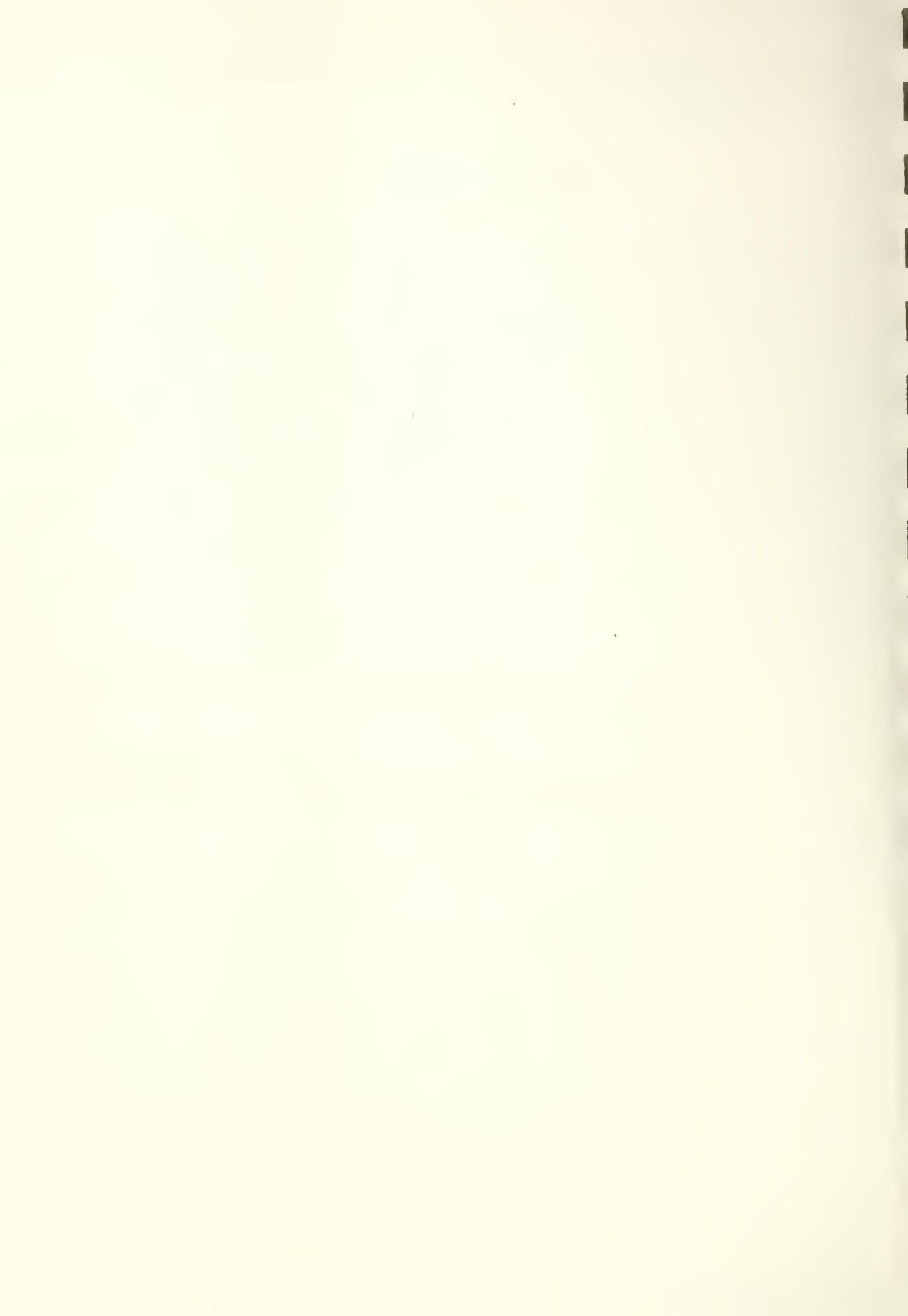
Flood hazard areas are identified within the communities of Hickory, Maiden, and Newton.

TECHNICAL PROCEDURES

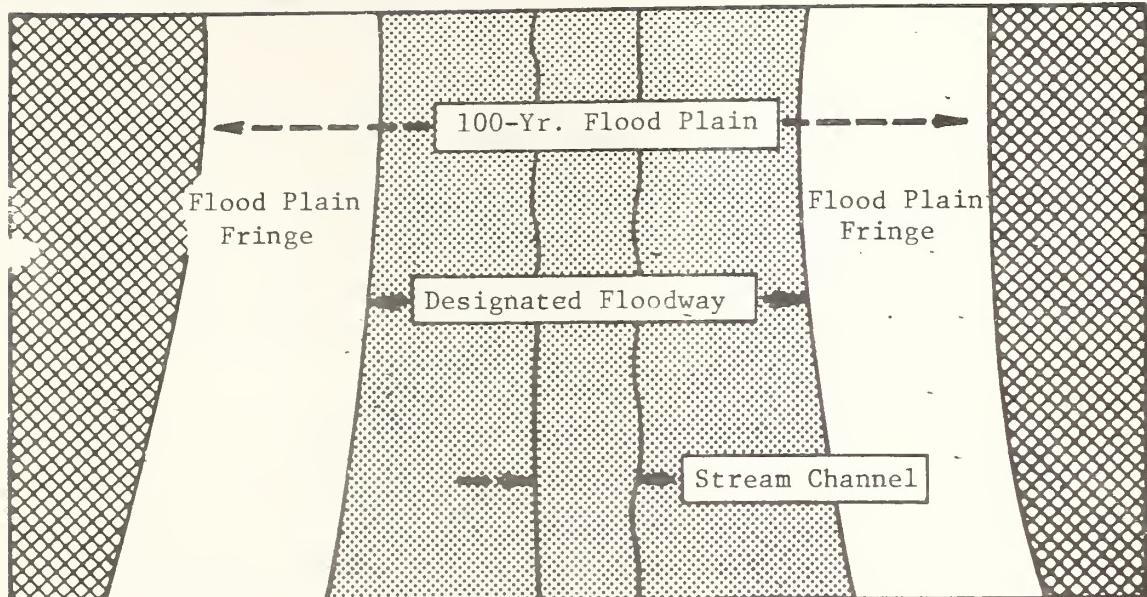
The analytical methods used in developing the data for this report are outlined in the Soil Conservation Service National Engineering Handbook, Section 4, and other standard guides and texts. A rainfall-runoff relationship and unit hydrograph method were used to develop the stage-discharge-frequency data required to define the flood prone areas. There are no stream gages within the study area; however, data from a gage in an adjoining watershed with similar hydrologic characteristics were analyzed, and the results compared favorably to the results from the study area obtained using the unit hydrograph method. The floodway data were developed in accordance with guidelines and criteria provided by the North Carolina Department of Natural and Economic Resources and with requirements of the U. S. Department of Housing and Urban Development. These guidelines require the use of equal conveyance loss on each side of the flood plain in determining the floodway (see Figure 1.).

The floodway data are in accordance with Section 3, Article 21, Chapter 146 (part 6) of the General Statutes of North Carolina.

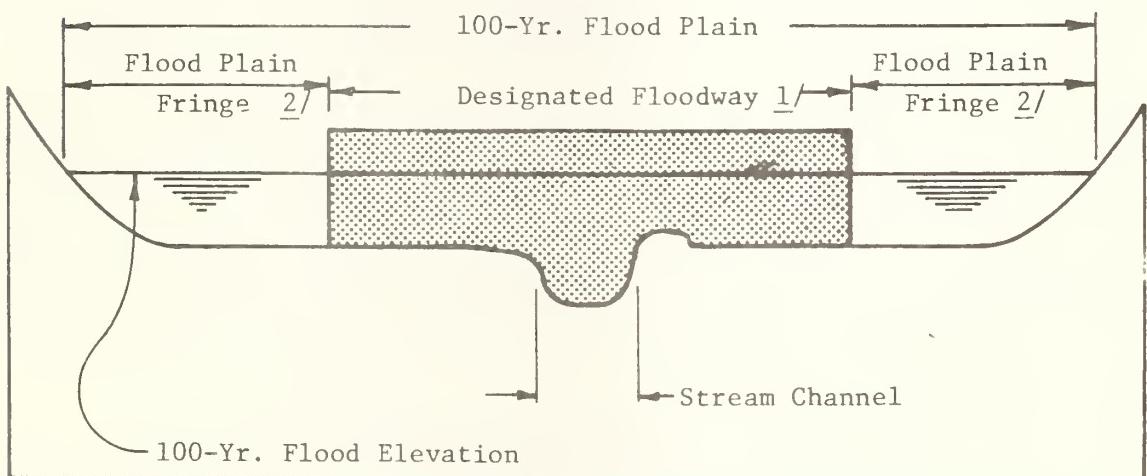
Water surface profiles were determined for the 10-year frequency, 100-year frequency, and a large magnitude storm (14 inch rainfall) exceeding the 100-year storm. A total of 76 representative cross sections were surveyed and used to develop the stage-discharge rating curve for developing the water surface profiles. In addition a floodway was calculated to convey the 100-year future condition flood with a one foot increase in water surface above the computed 100-year future condition flood, and with equal conveyance loss on each side of the flood plain. The delineation of the flood plain the upstream reaches was terminated when the flood plain width was less than 400 feet.



FLOOD HAZARD AREAS



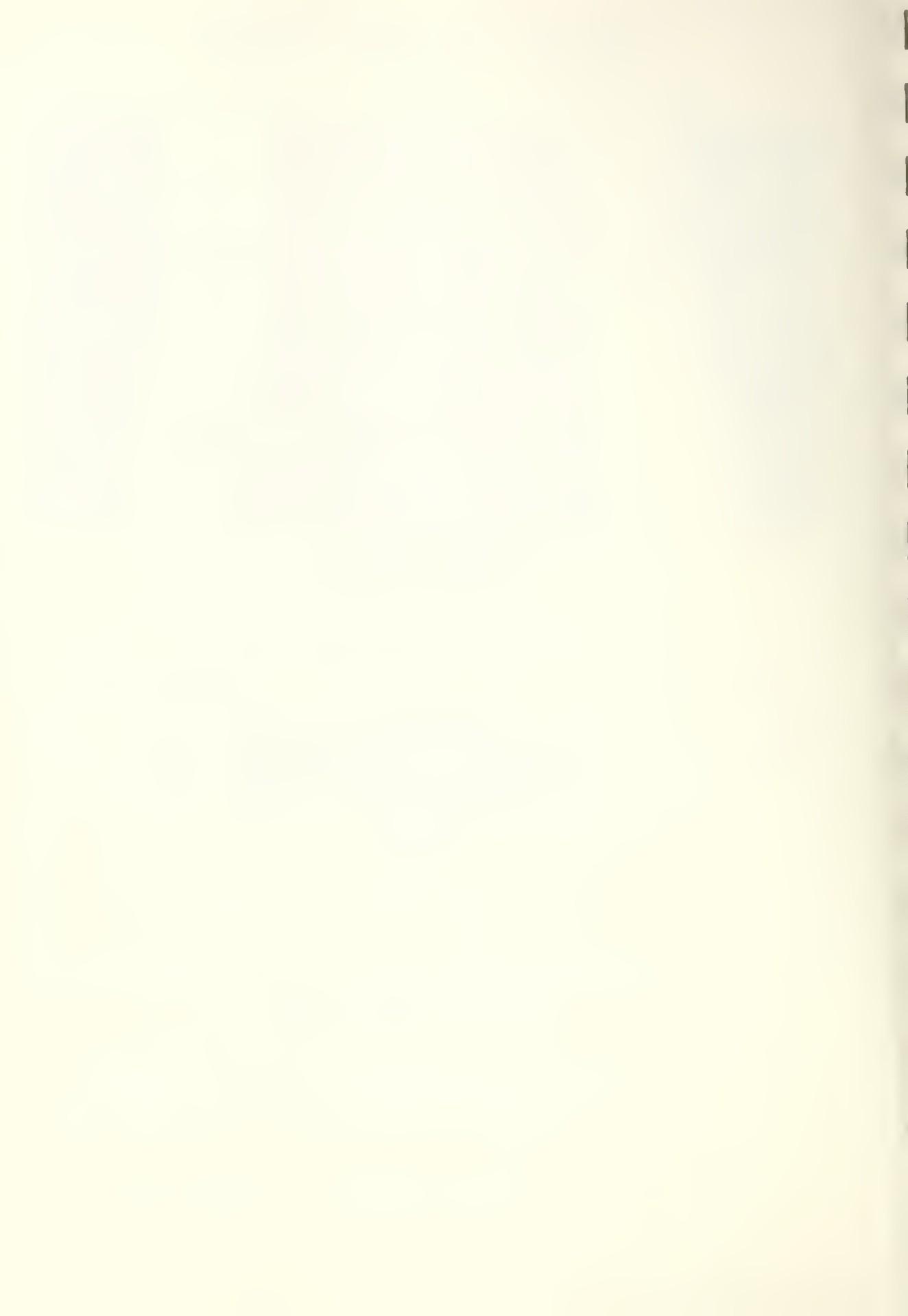
PLAN VIEW



CROSS SECTION

- 1/ DESIGNATED FLOODWAY is the adjusted portions of the 100-year flood plain allowing for an acceptable increase in the 100-year flood height, no building or fill permitted.
- 2/ FLOOD PLAIN FRINGE - Urban use permitted if protected by fill, floodproofed, or otherwise protected.

Figure 1



The outline of the floodway as shown on the maps was delineated using data developed by the Soil Conservation Service and located as approved by the sponsoring local organization.

The 100 year flood was analyzed both with existing development conditions and with estimated future development conditions. The present conditions analysis was used to compare the simulation model with the analysis of stream gage data from the adjoining watershed. The future conditions analysis was used to determine the extent of flooding which is to be expected in the study area.

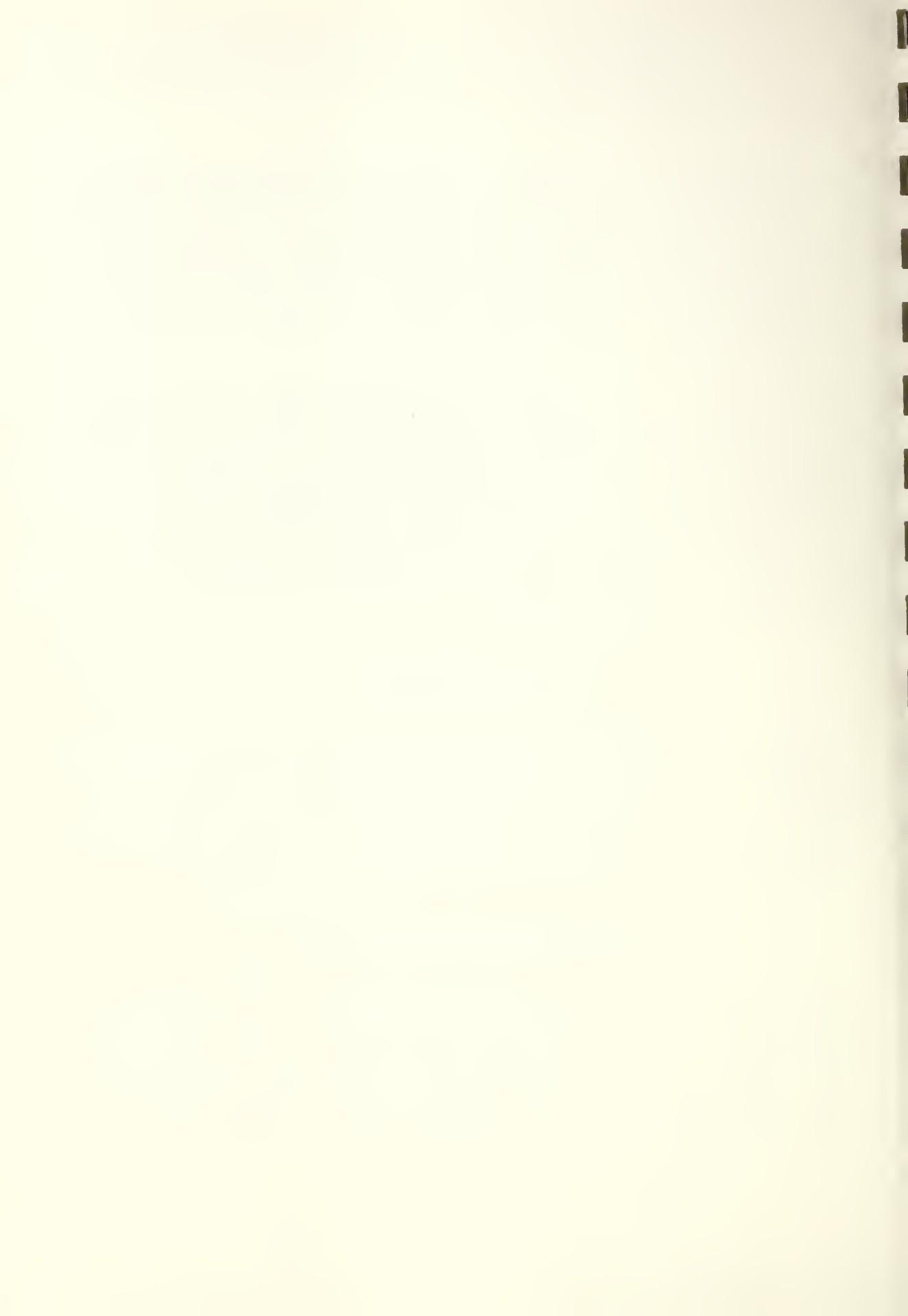
The future conditions considered were provided by local officials and were based on existing and planned zoning regulations that will influence the amount, kind, and location of development within the study area. This being one of the most dense urban areas in the Piedmont of North Carolina, the projected development is for a high degree of urban and commercial development. This urban condition is reflected in the analysis by increased runoff resulting in more flooding.

MAPS AND PROFILES

Included in this report are photo-strip maps of the flood plain area showing the areas that will be flooded by the large magnitude flood, the 100 year flood, and the area required for the floodway as approved by the Sponsors. Also included are profiles of the streams studies showing the elevations of the water surface of the various floods.

INTERPRETATION FOR USE OF REPORT

The flood stages provided in this report should be considered as minimum elevations for controlling development. Certain indeterminate factors and conditions affecting future flood flows could cause greater flood stages than indicated. During floods it is possible that debris may collect on bridges and culverts, uprooted trees and stumps could clog



the channels, thus reducing the flow capacity of the bridge openings and channels. These factors cannot be accurately predicted and were not considered in preparing this report.

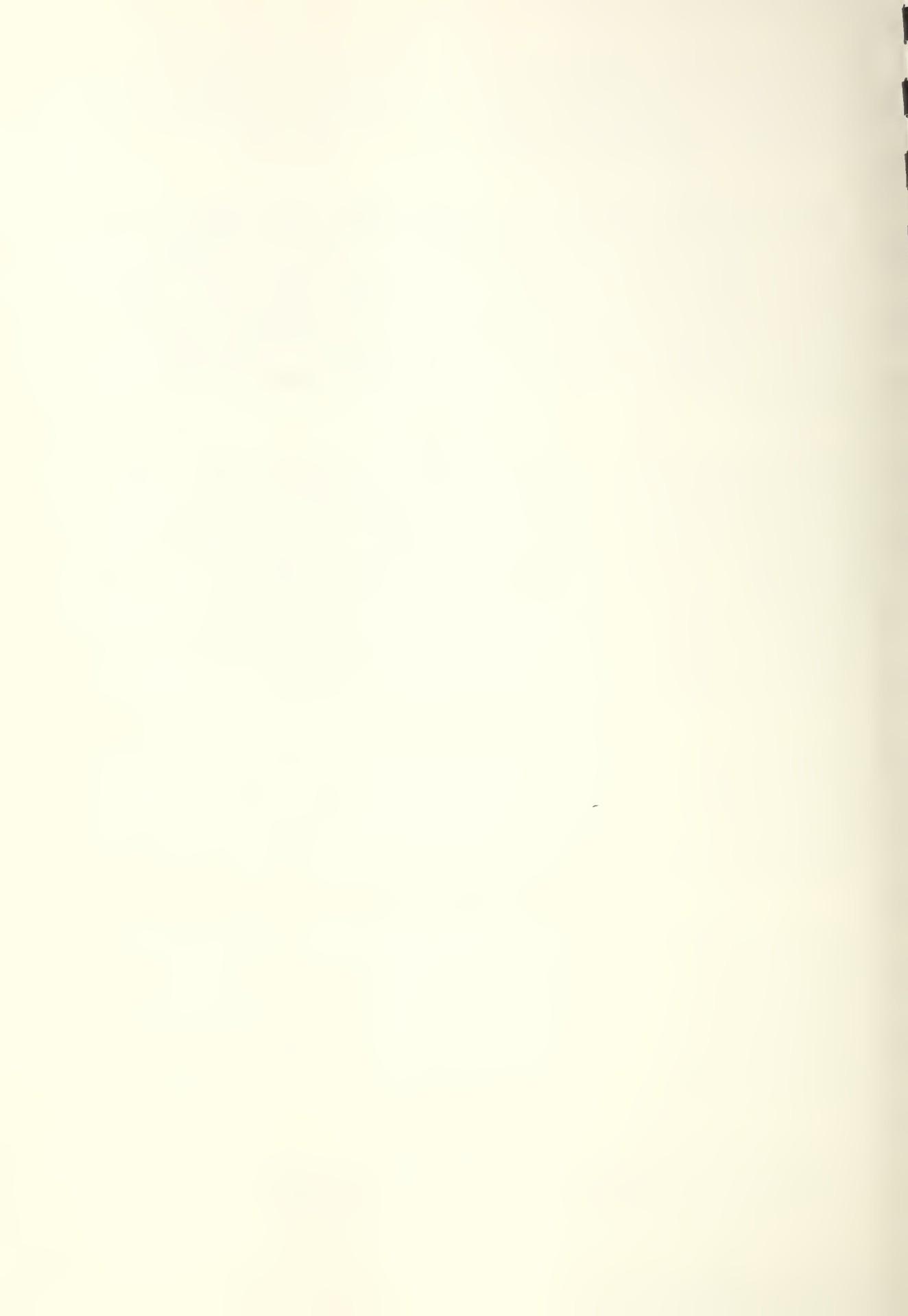
The plan was developed based on the future development being in line with current zoning restrictions and with the necessary floodway being open to flood flows. If development is allowed which is more intense than was used in preparing the report or if encroachment is allowed within the needed floodway, a reassessment based on actual conditions would be necessary to adequately describe flood stages and flood zone boundaries.

The photo-strip maps show the flood zones as discussed above. The zone limits shown on the maps approximate the location on the ground and can be used for most decisions concerning permits for buildings and other developments. For more precise location of the flood zone boundaries, the elevations shown on the profiles can be transferred from established bench marks to the point in question. The location and elevation of bench marks established during this study are available from Catawba County and from the SCS.

The 76 representative surveyed valley sections are located on the photo strip maps and on the profile sheets. Use of these sections as reference points can be helpful in determining flood elevations at any stream station on the profiles.

The Soil Conservation Service has completed a Soils Survey of Catawba County which will be published in the immediate future. This Soil Survey shows the types of soils in the flood plain and adjacent areas, together with soils maps showing the location of these soils. The soil survey can be used with this flood plain study to aid in the location of flood prone areas.

Soil Conservation Service personnel are available to provide further explanation or interpretation of this report upon request. The basic

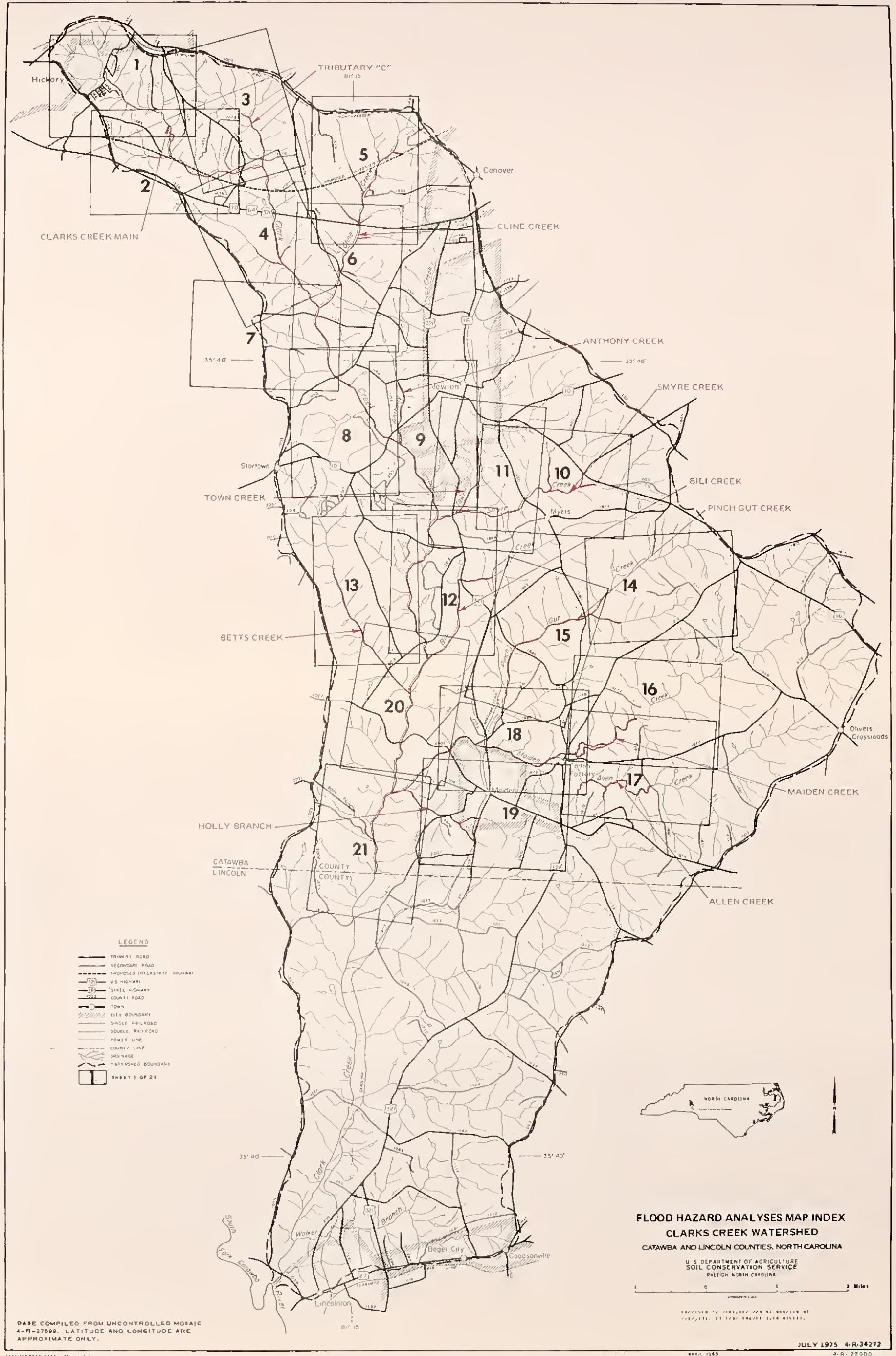


data not included in this report are on file in the offices of the United States Department of Agriculture, Soil Conservation Service, Federal Building, 310 New Bern Avenue, P. O. Box 27307, Raleigh, North Carolina 27611.



Appendix A

maps



BASE COMPILED FROM UNCONTROLLED MOSAIC
4-R-2789. LATITUDE AND LONGITUDE ARE
APPROXIMATE ONLY.

FLOOD HAZARD ANALYSES MAP INDEX
CLARKS CREEK WATERSHED
CATAWBA AND LINCOLN COUNTIES, NORTH CAROLINA

U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

RALEIGH NORTH CAROLINA

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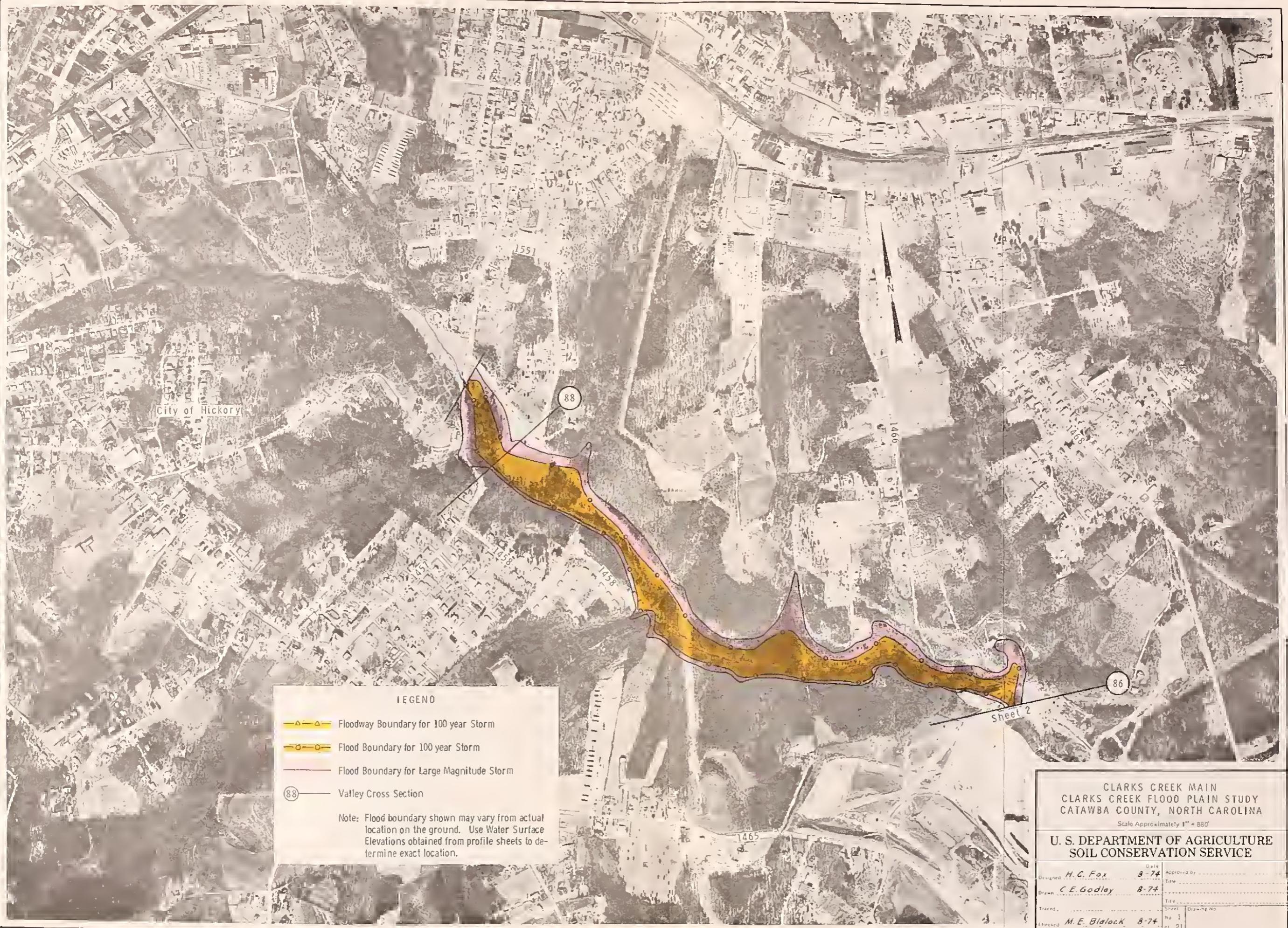
APPENDIX IV - 102

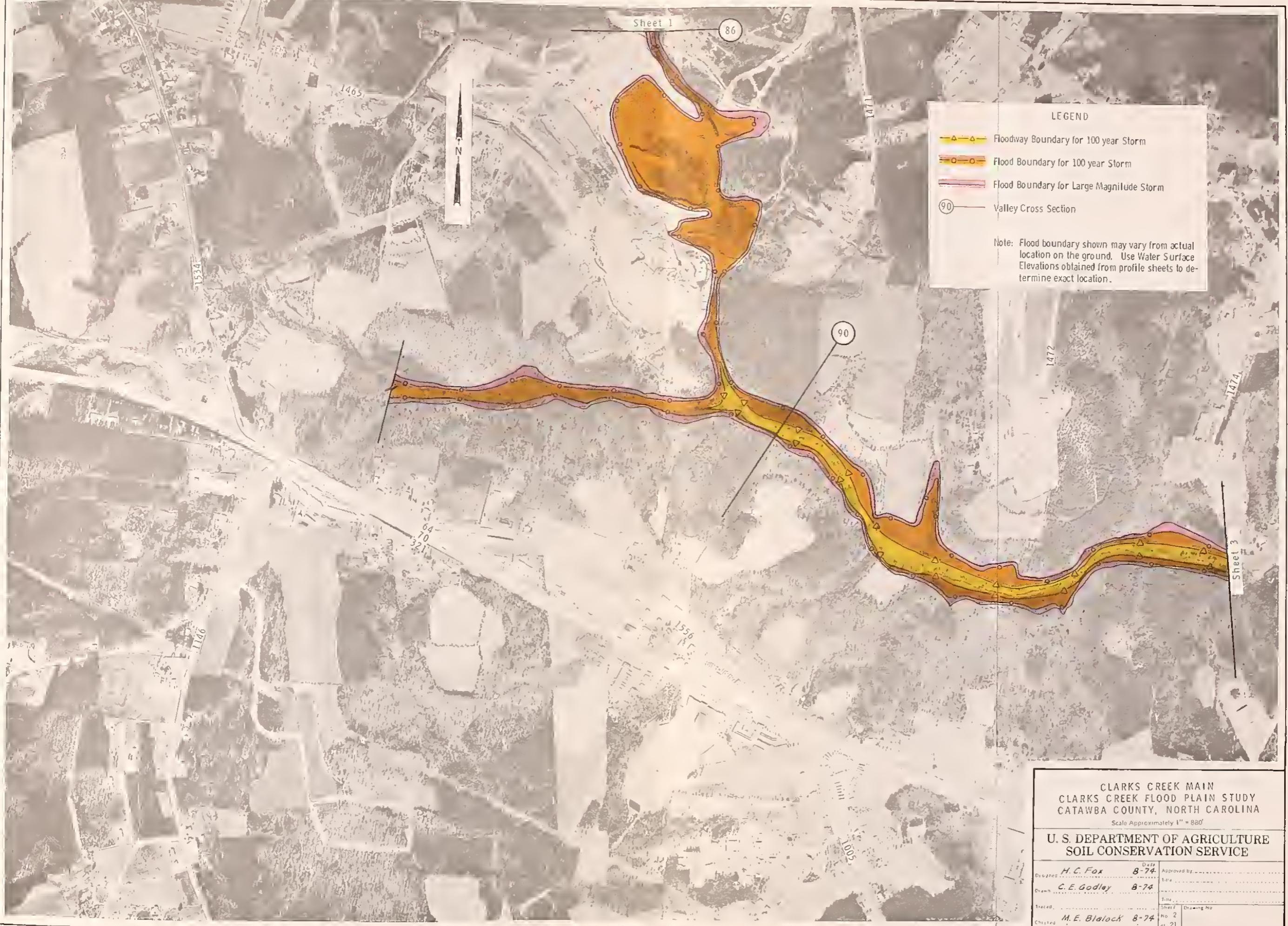
ANSWER TO EXERCISES

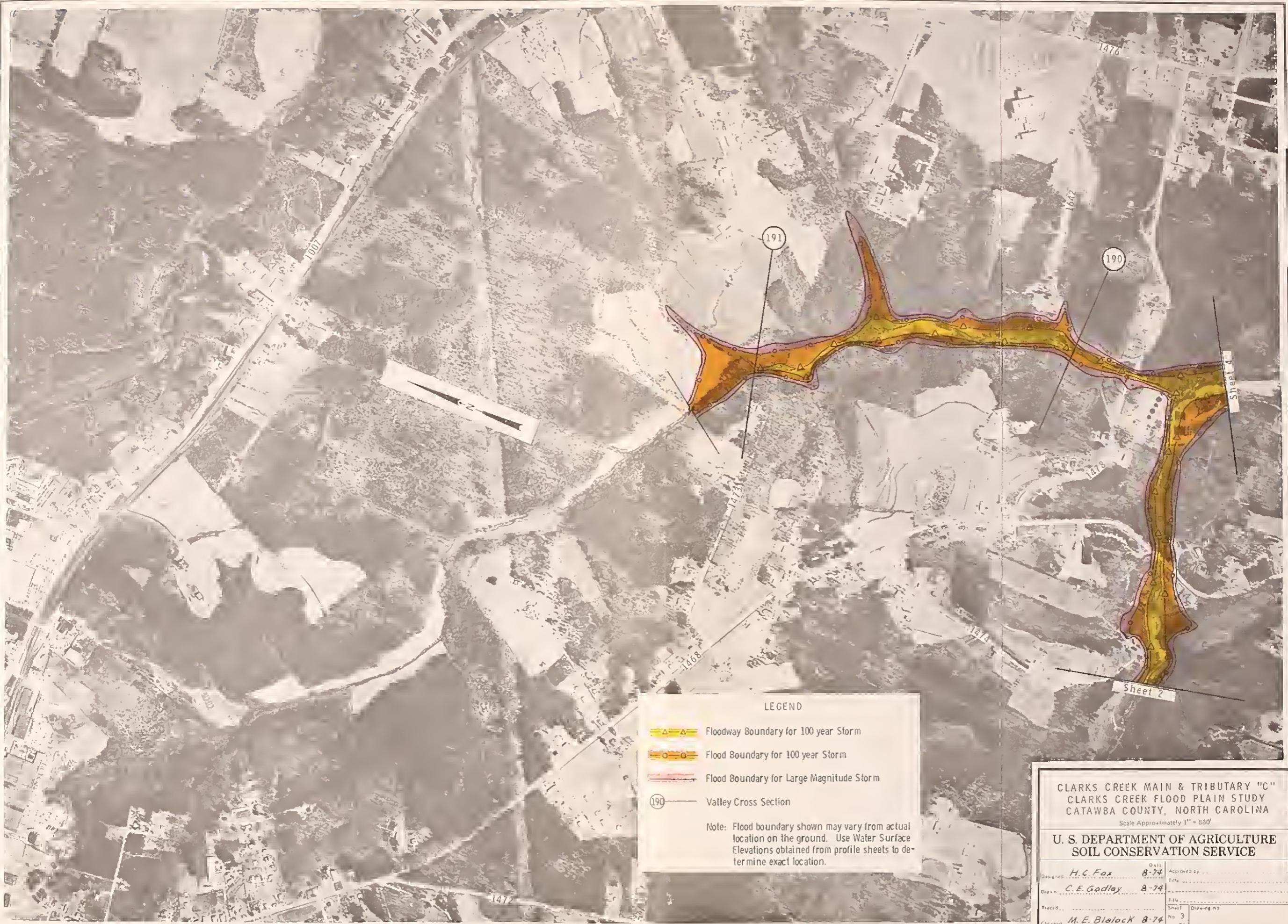
REVIEWED BY ROBERT L. BROWN

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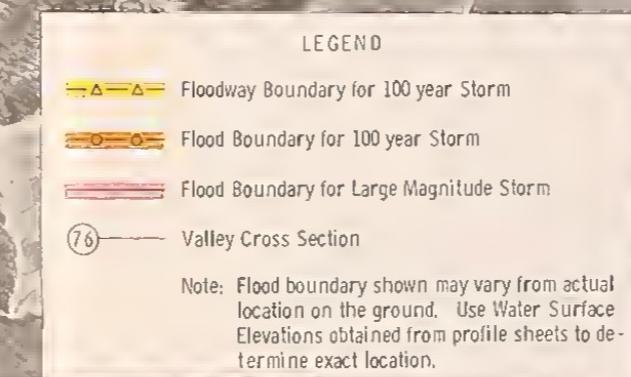


Sheet 3

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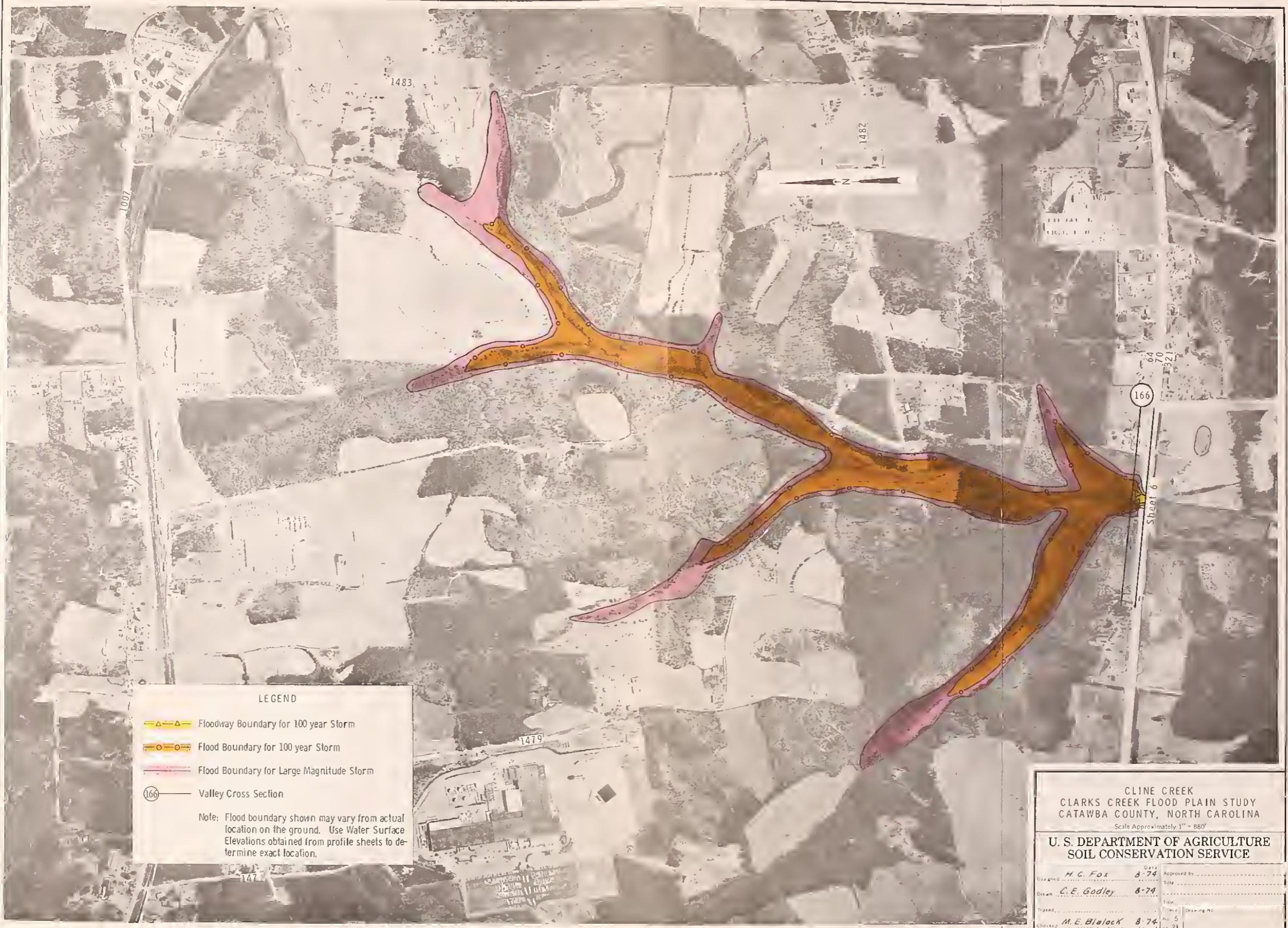


CLARKS CREEK MAIN
CLARKS CREEK FLOOD PLAIN STUDY
CATAWBA COUNTY, NORTH CAROLINA
Scale Approximately 1" = 880'

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

H.C. Fox	Date 8-74	Approved by
C.E. Godley	Drawn 8-74	Title
checked	Sheet No. 4	Drawing No.
M.E. Blalock 8-74	Rev. 21	Page No.

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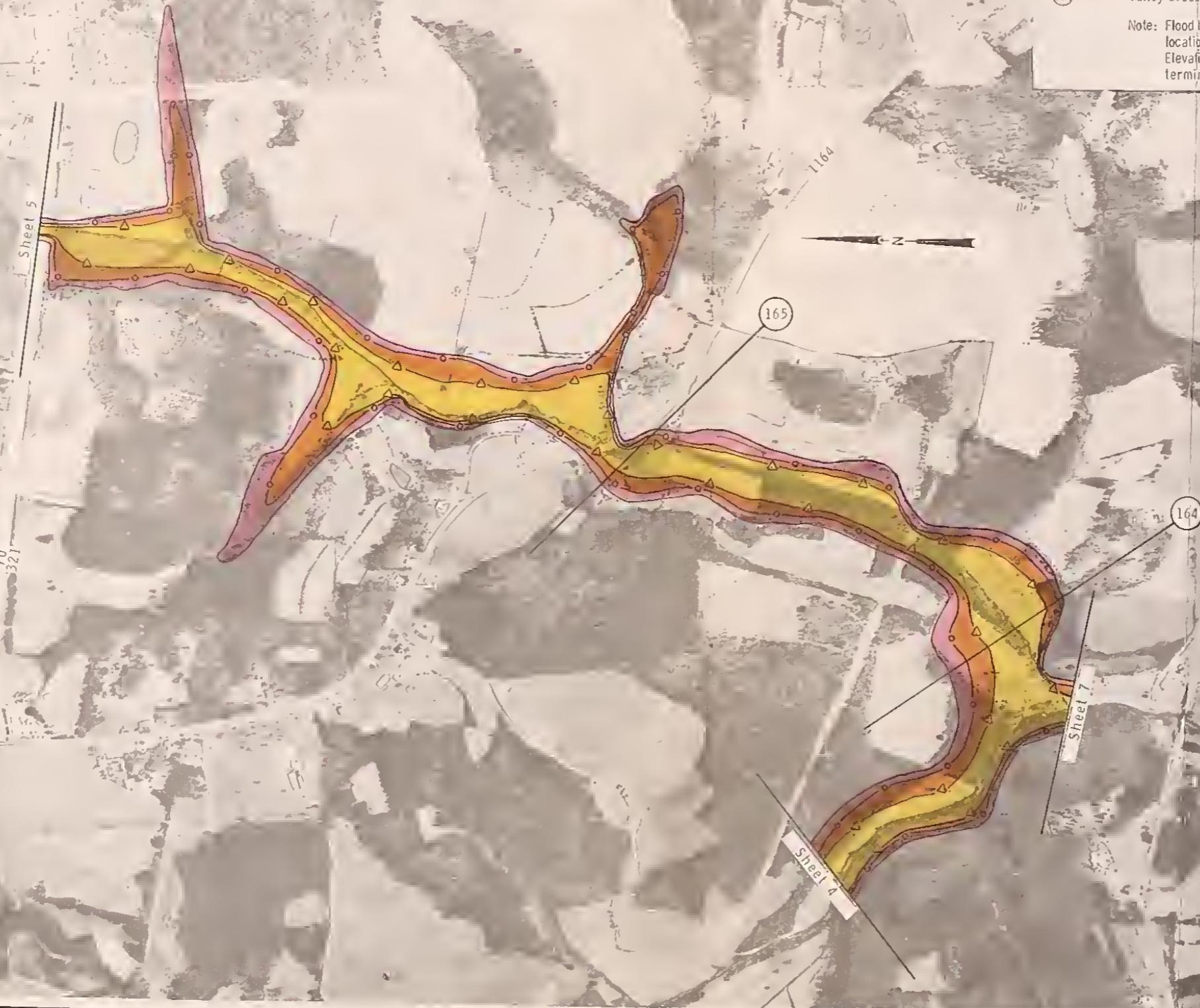
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LEGEND

- △—△— Floodway Boundary for 100 year Storm
- Flood Boundary for 100 year Storm
- Flood Boundary for Large Magnitude Storm
- 164 Valley Cross Section

Note: Flood boundary shown may vary from actual location on the ground. Use Water Surface Elevations obtained from profile sheets to determine exact location.



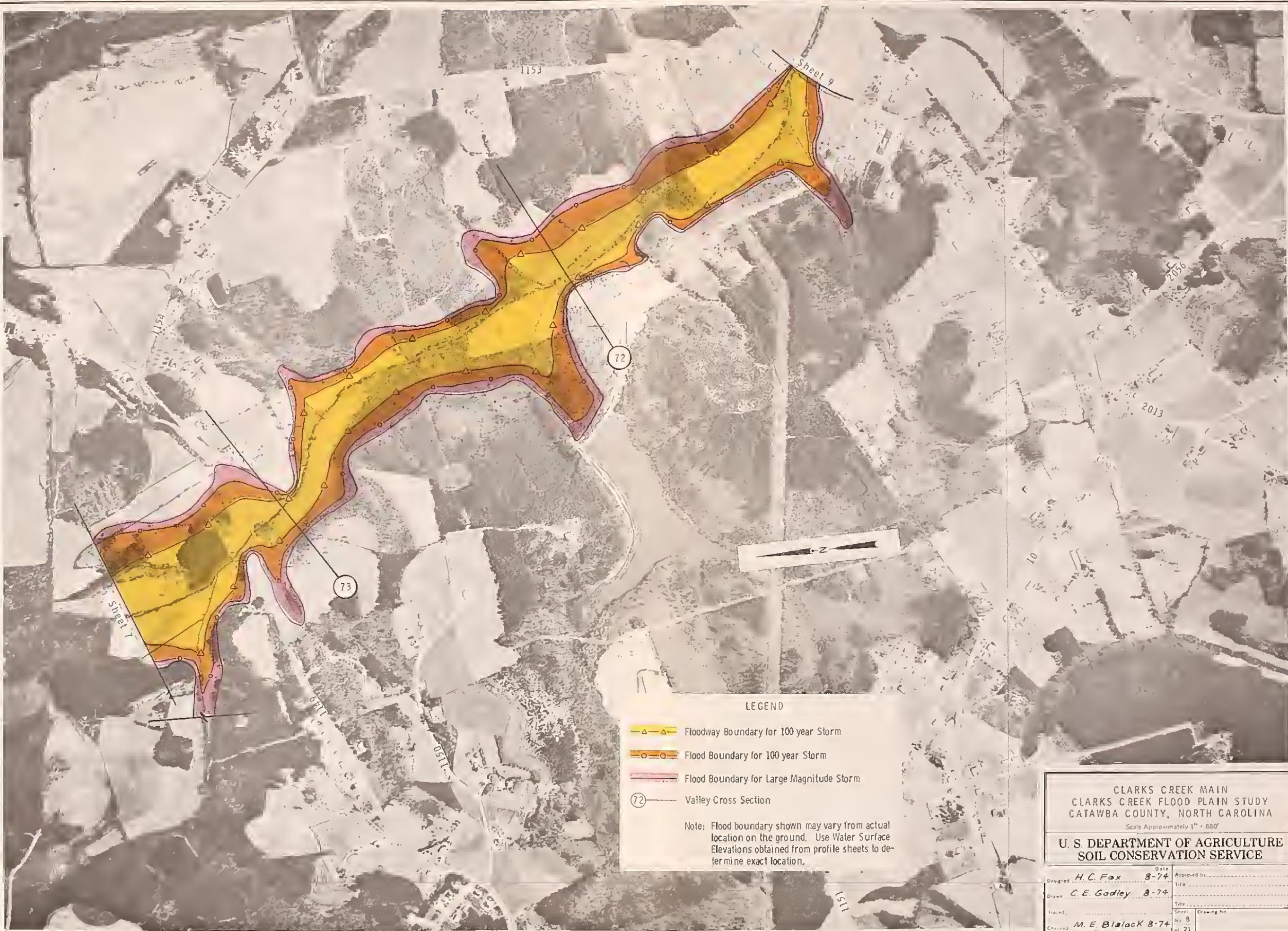
CLINE CREEK
CLARKS CREEK FLOOD PLAIN STUDY
CATAWBA COUNTY, NORTH CAROLINA
Scale Approximately 1" = 880'

U. S. DEPARTMENT OF AGRICULTURE
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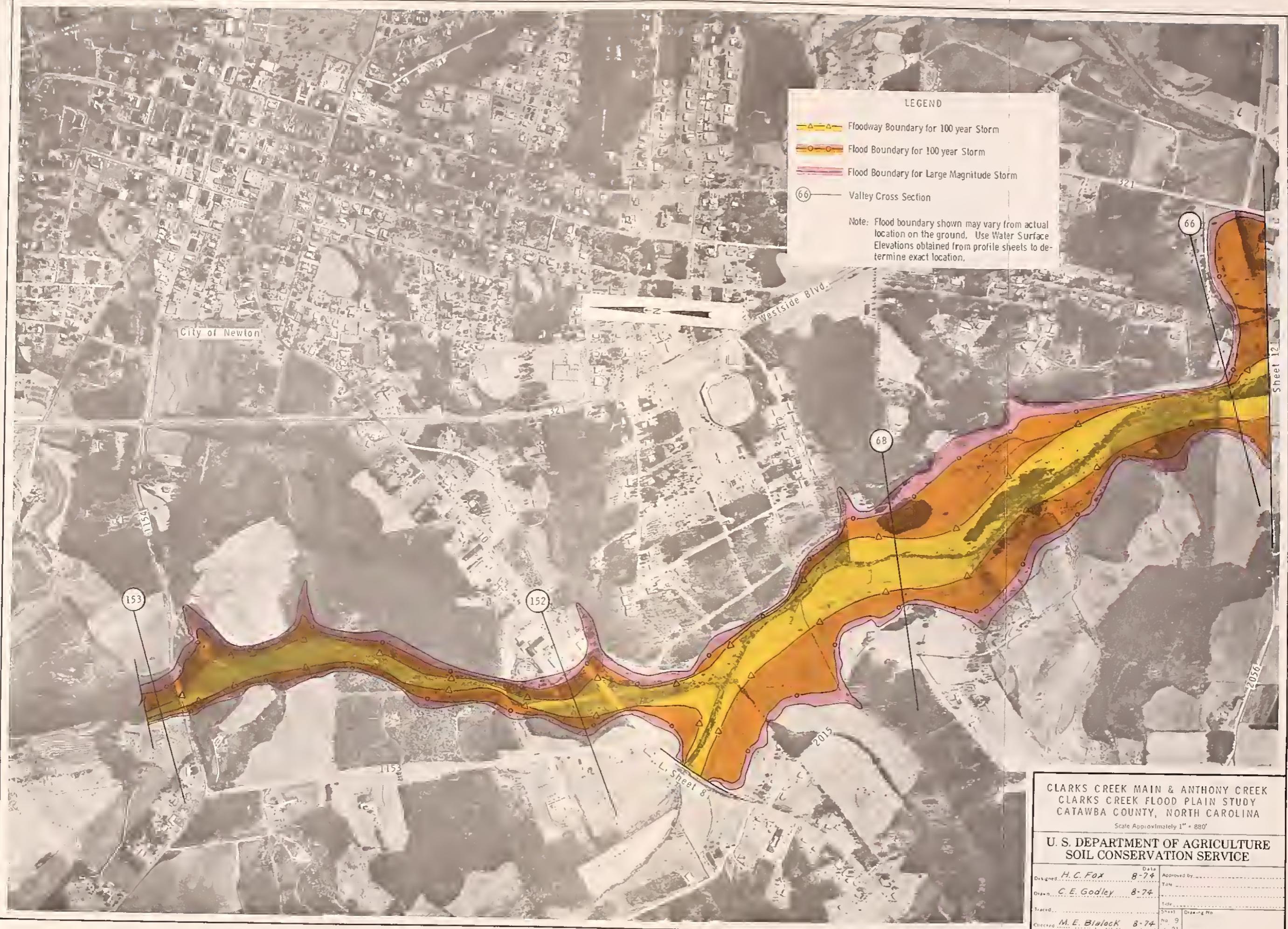
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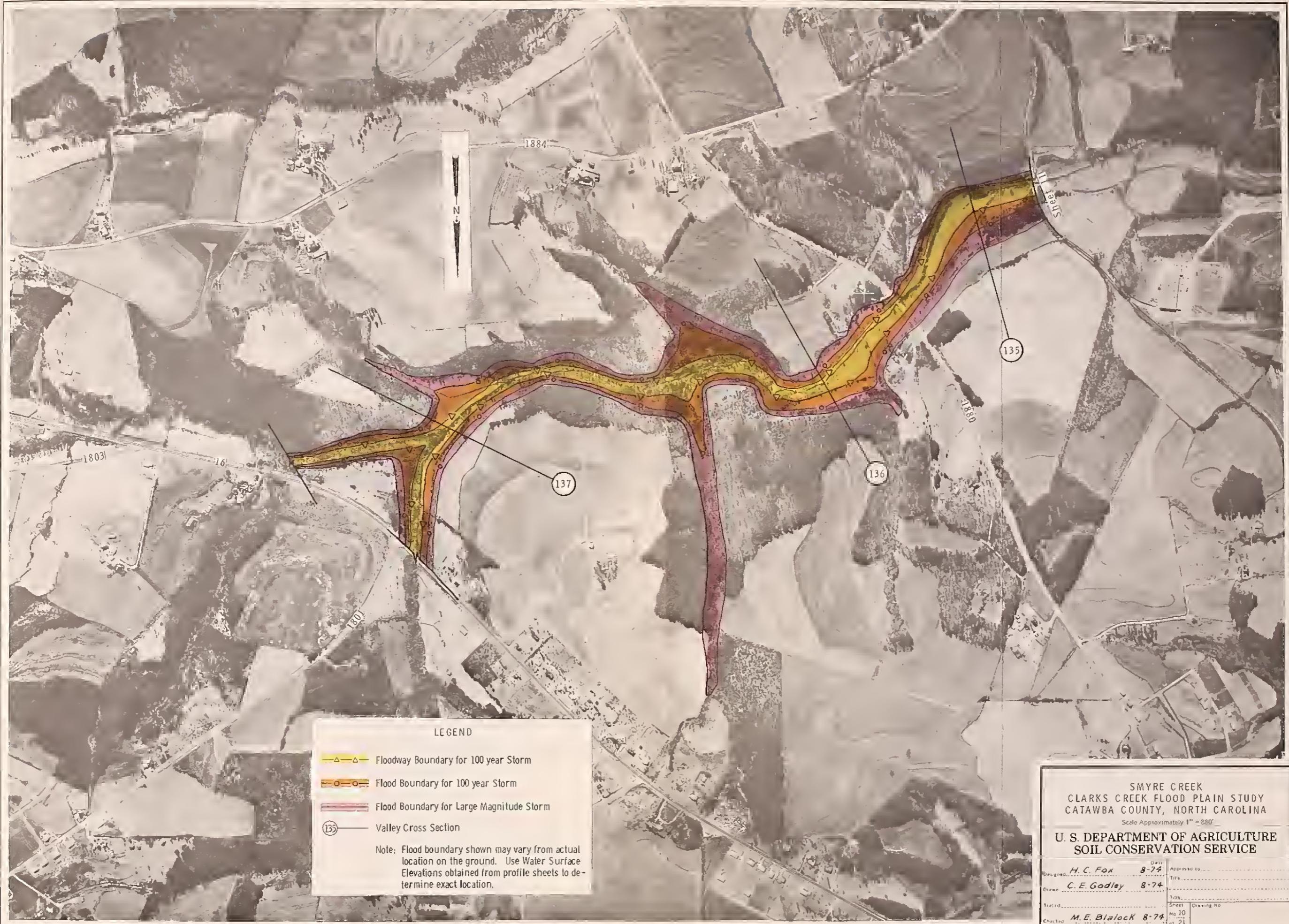


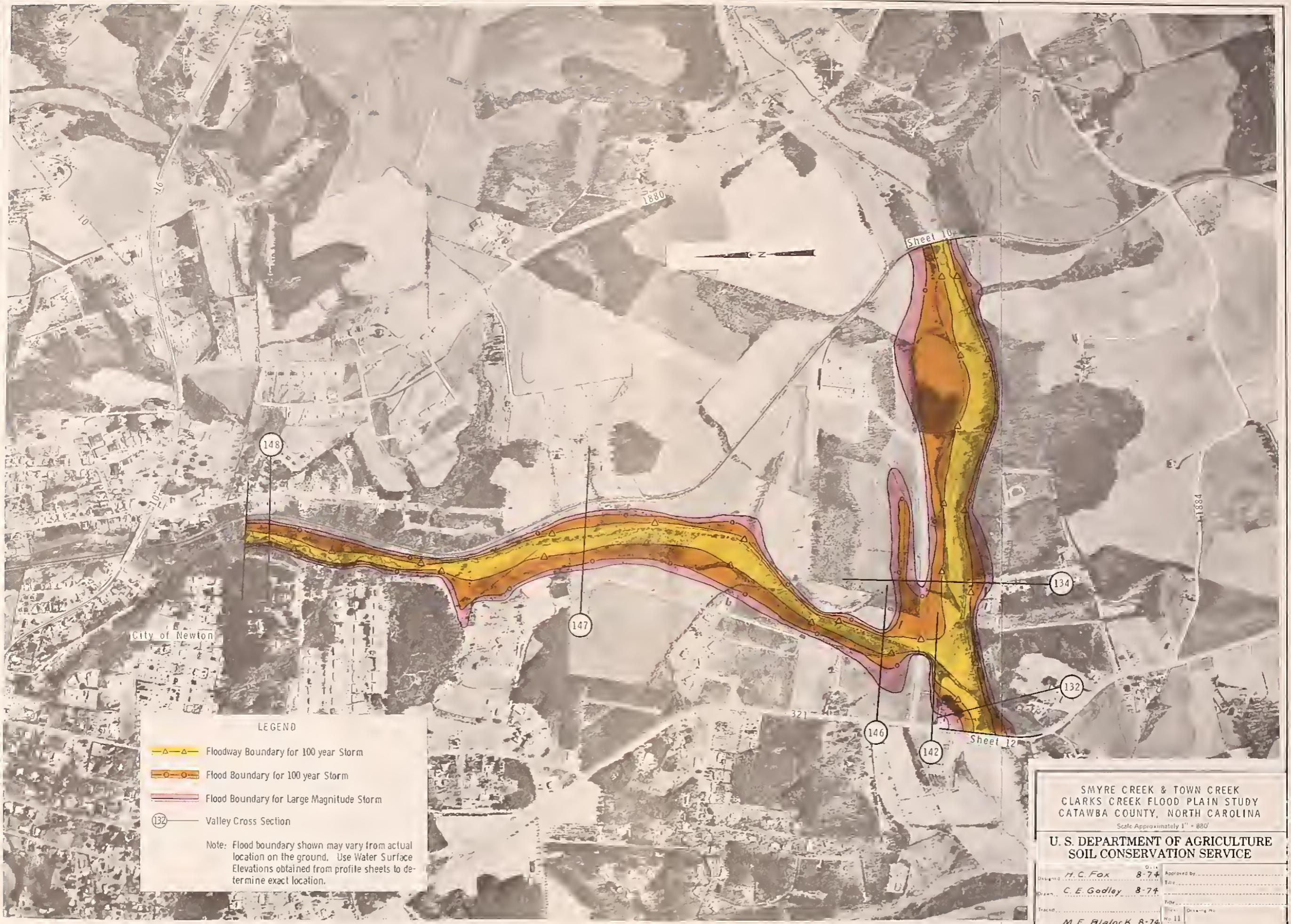
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SMYRE CREEK & TOWN CREEK
CLARKS CREEK FLOOD PLAIN STUDY
CATAWBA COUNTY, NORTH CAROLINA

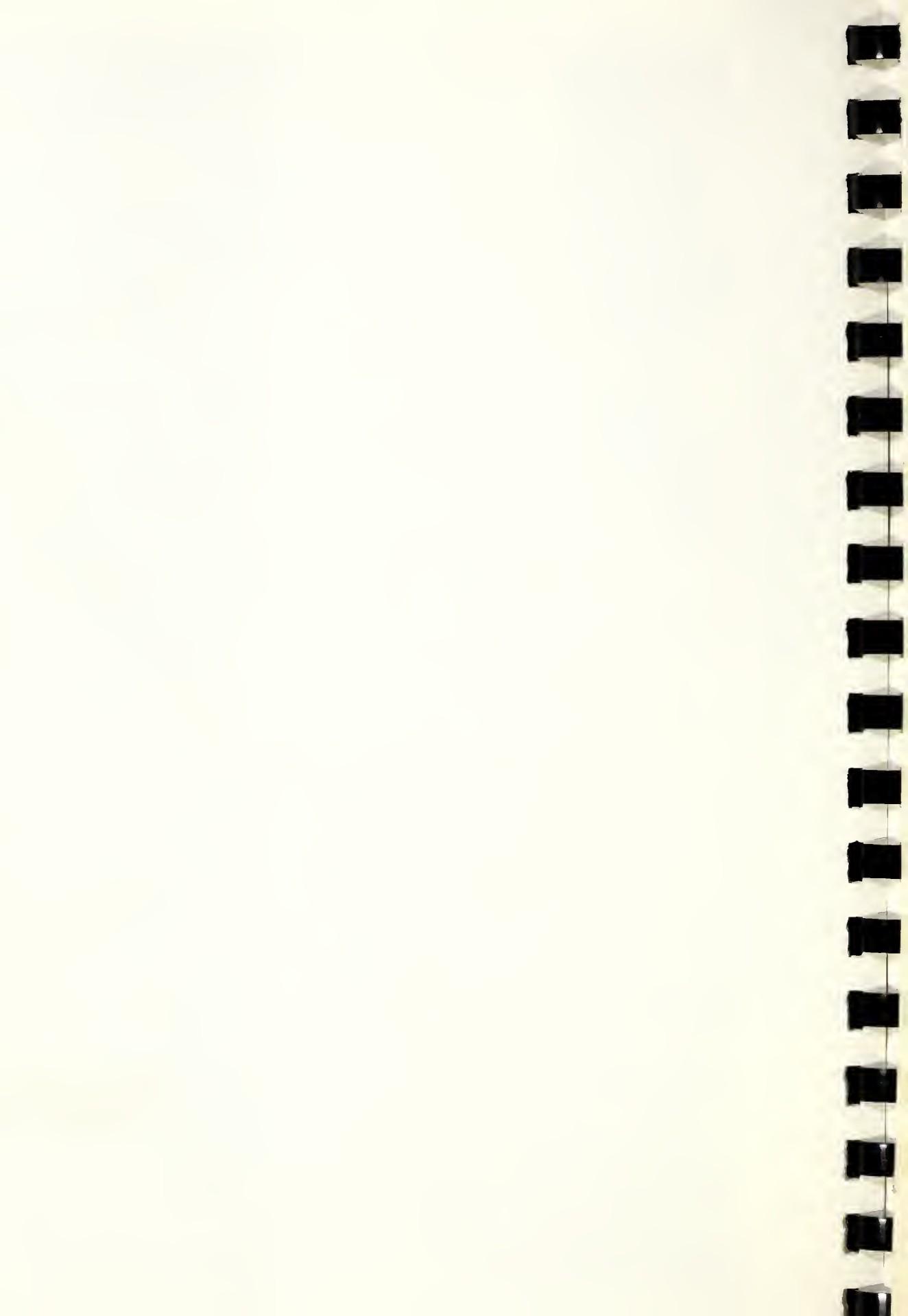
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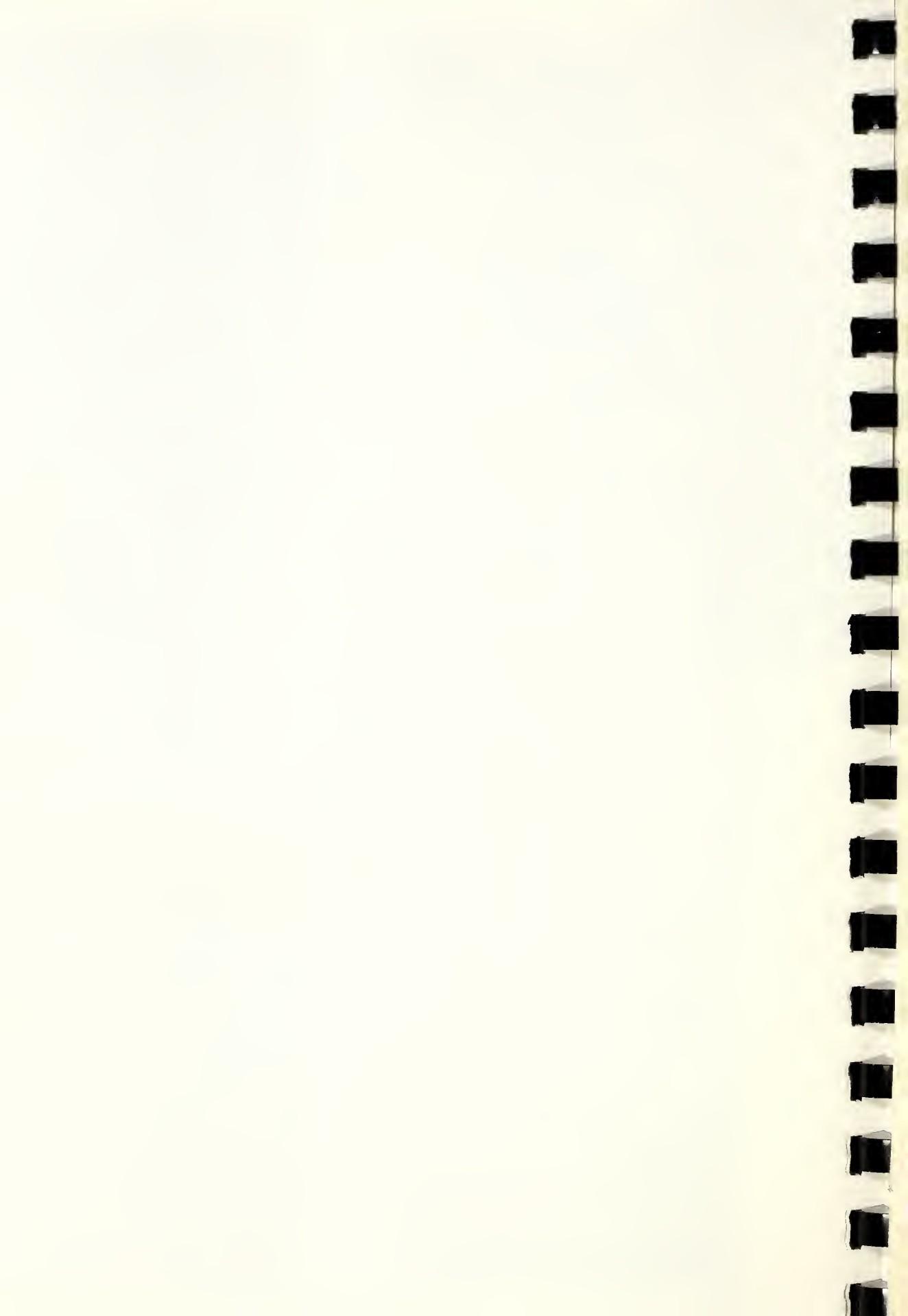
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Certified. M. E. Blalock	8-74	Drawing No. 11
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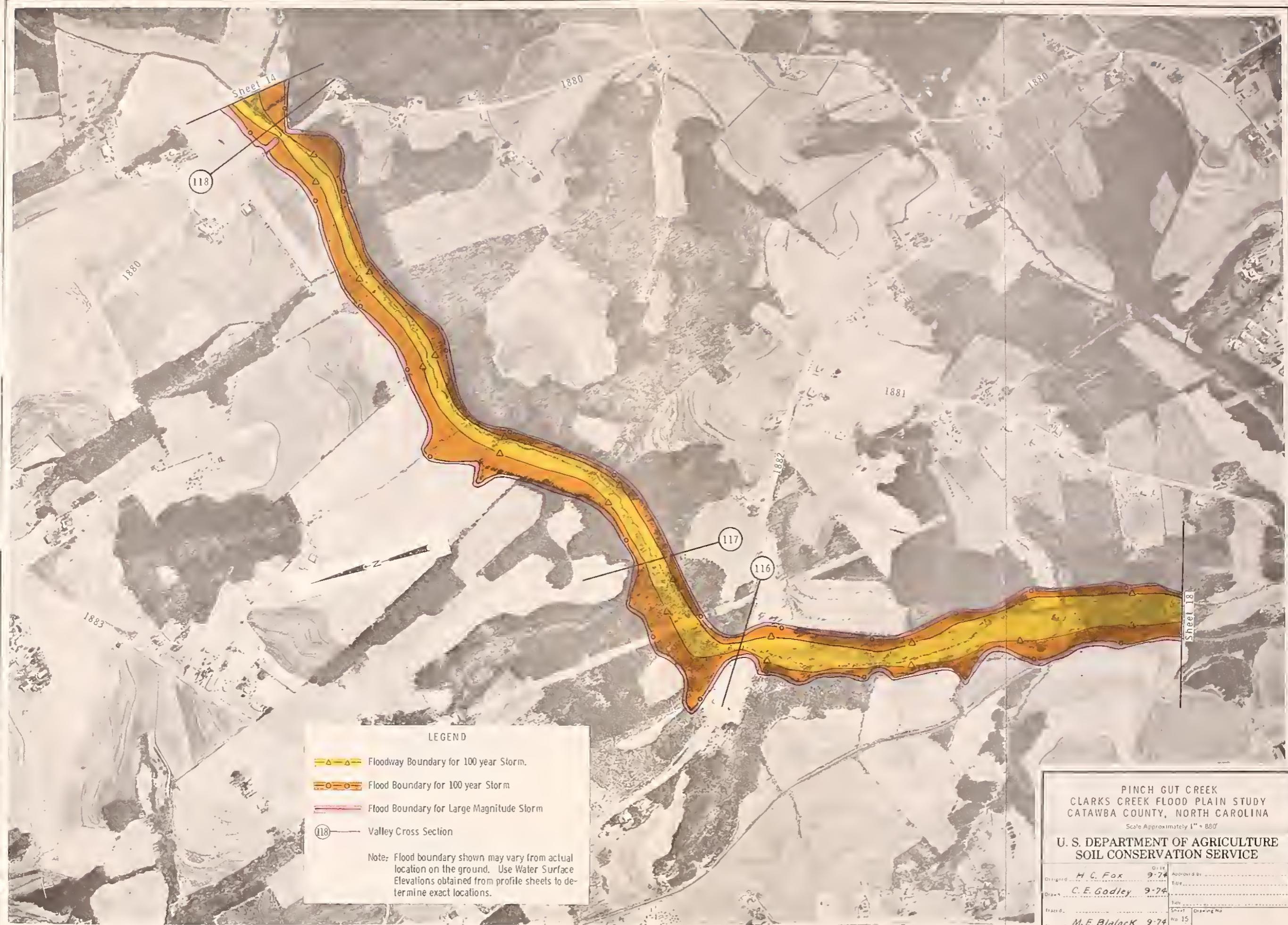


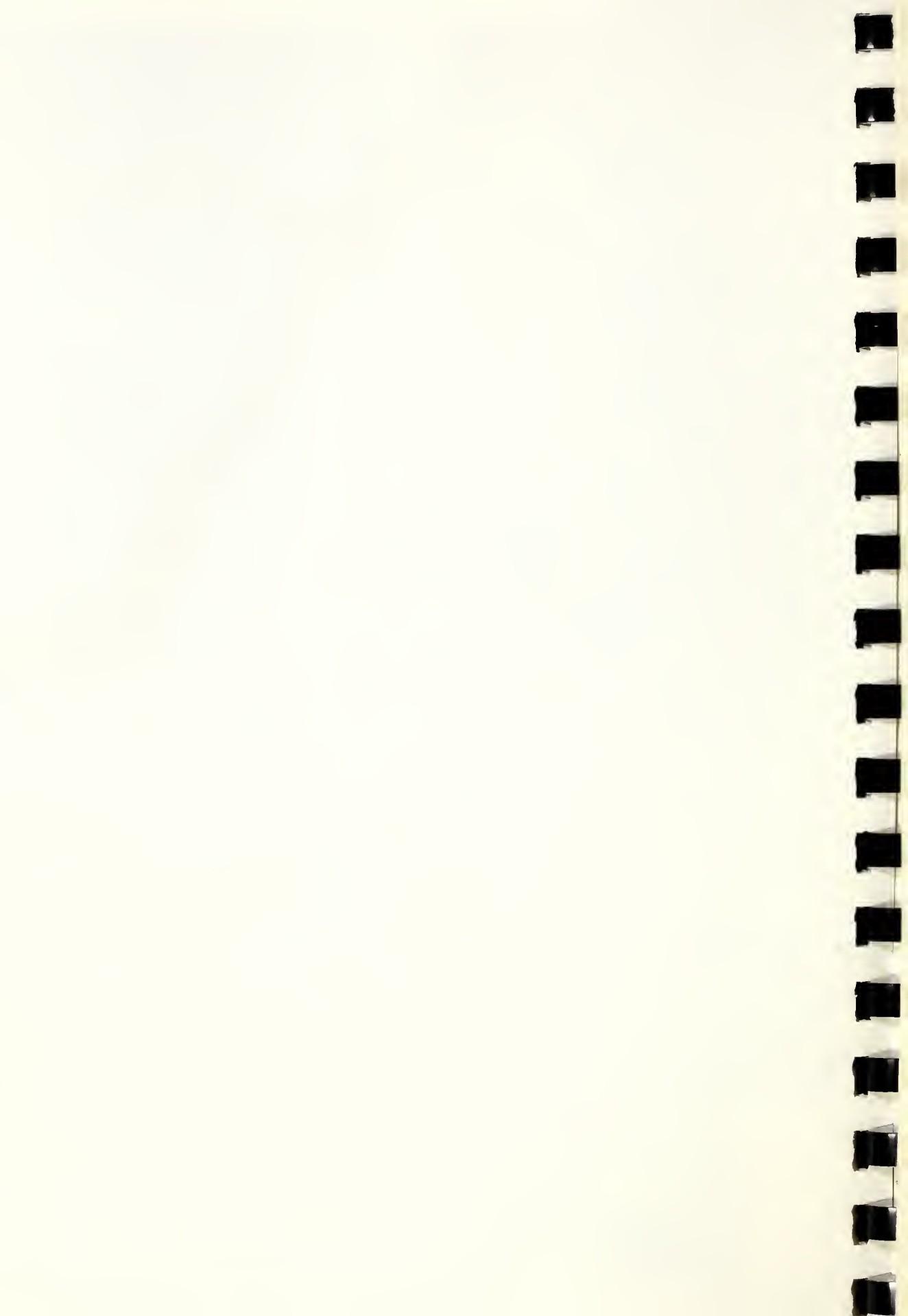


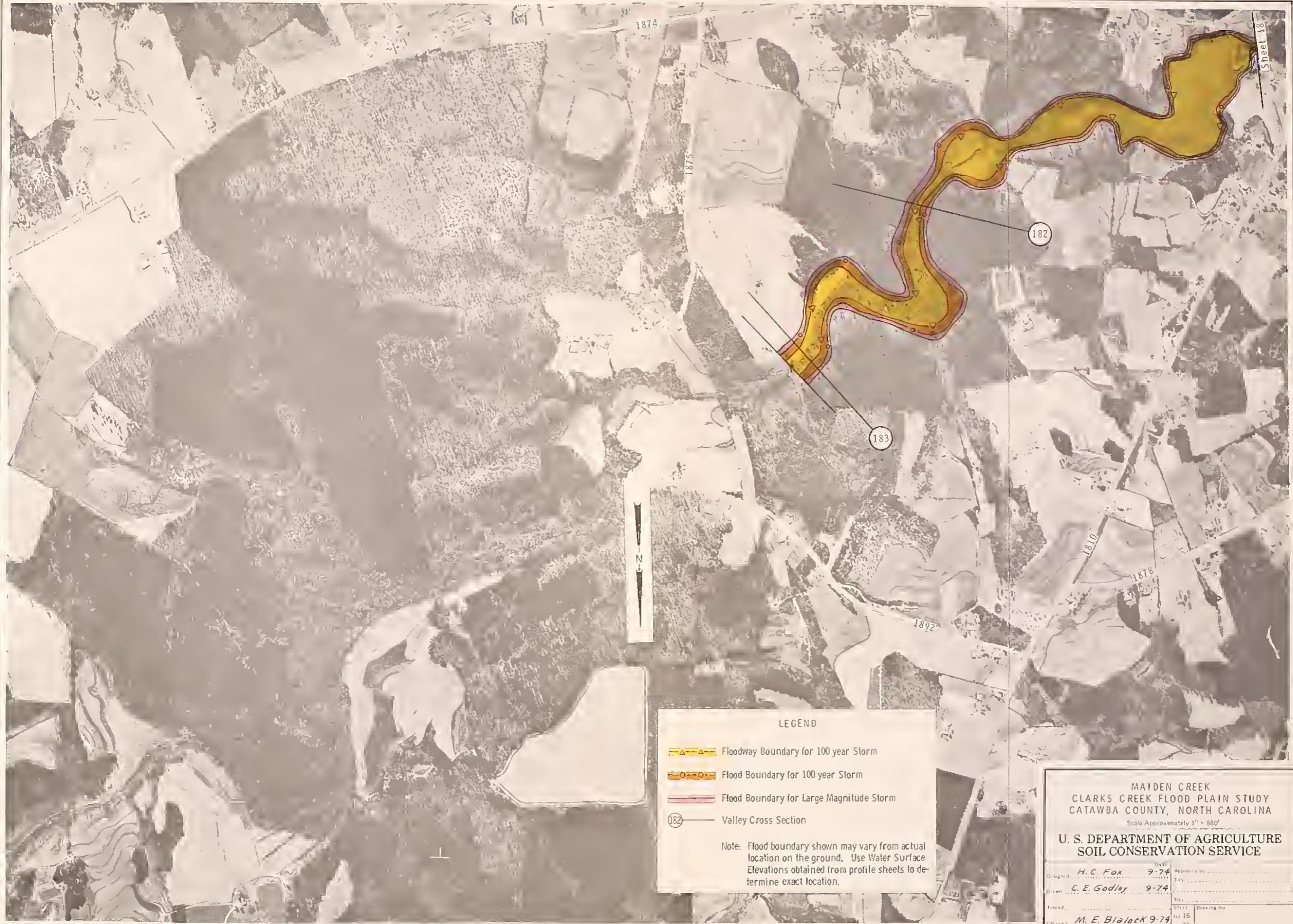








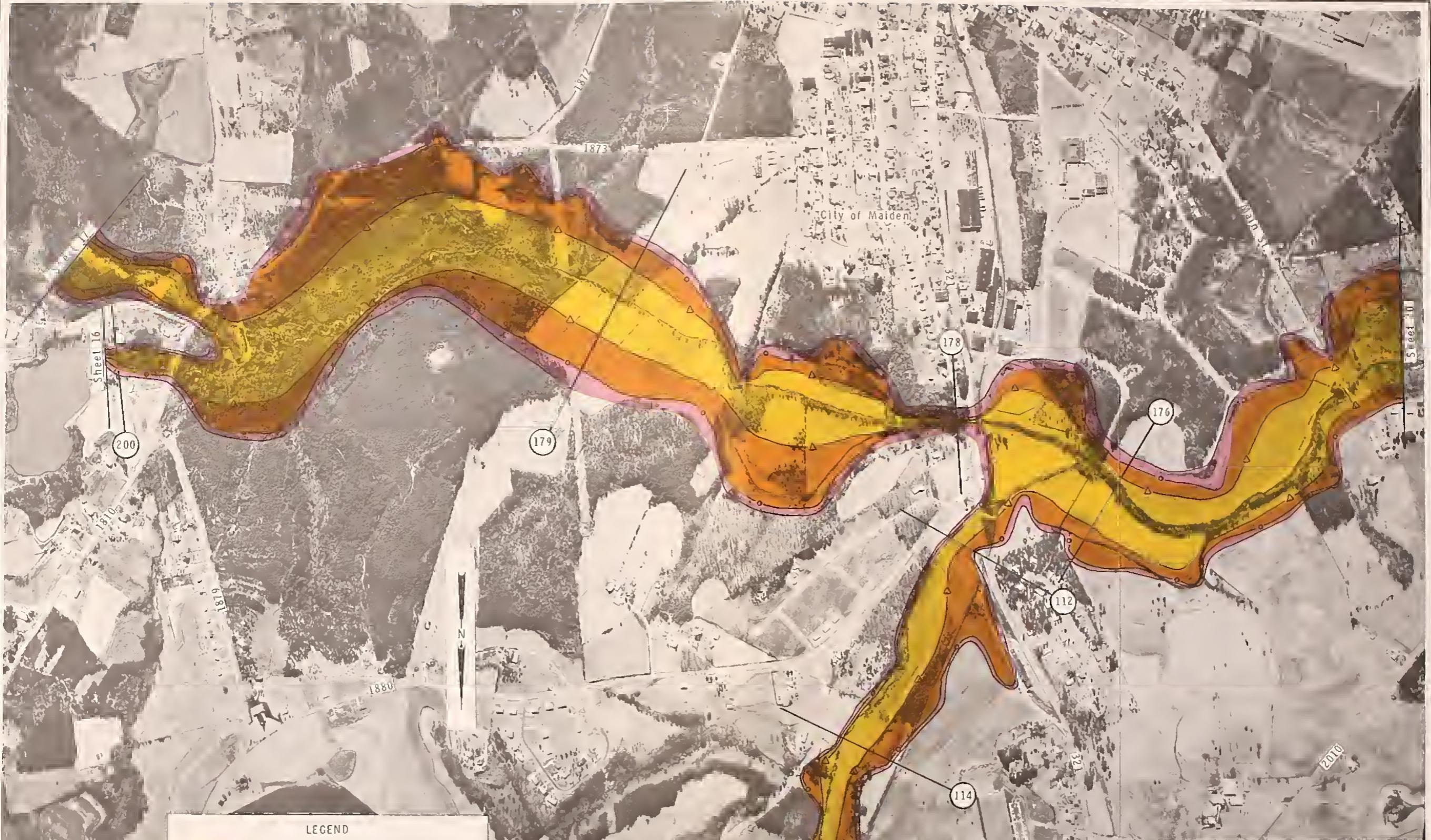




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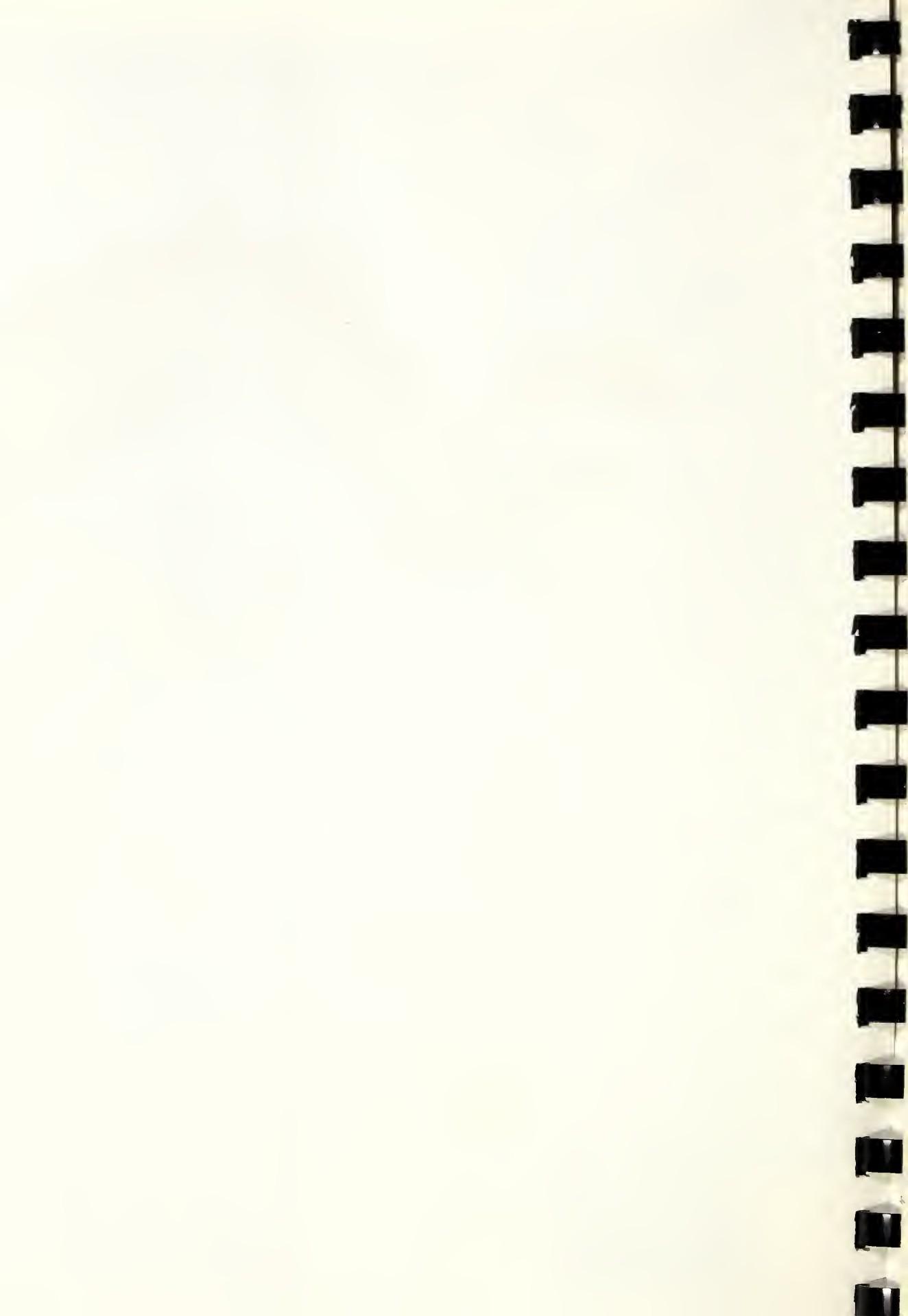


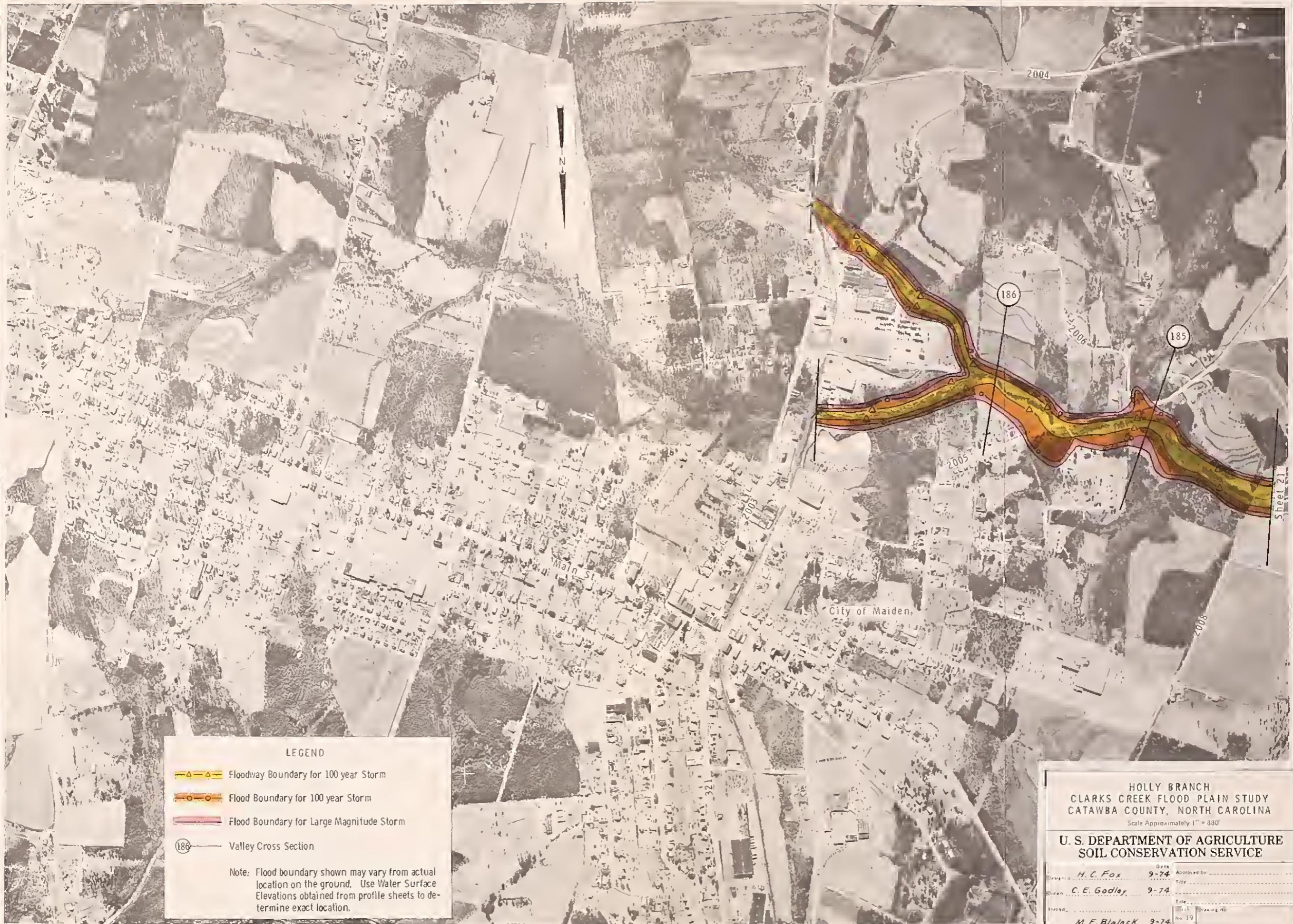
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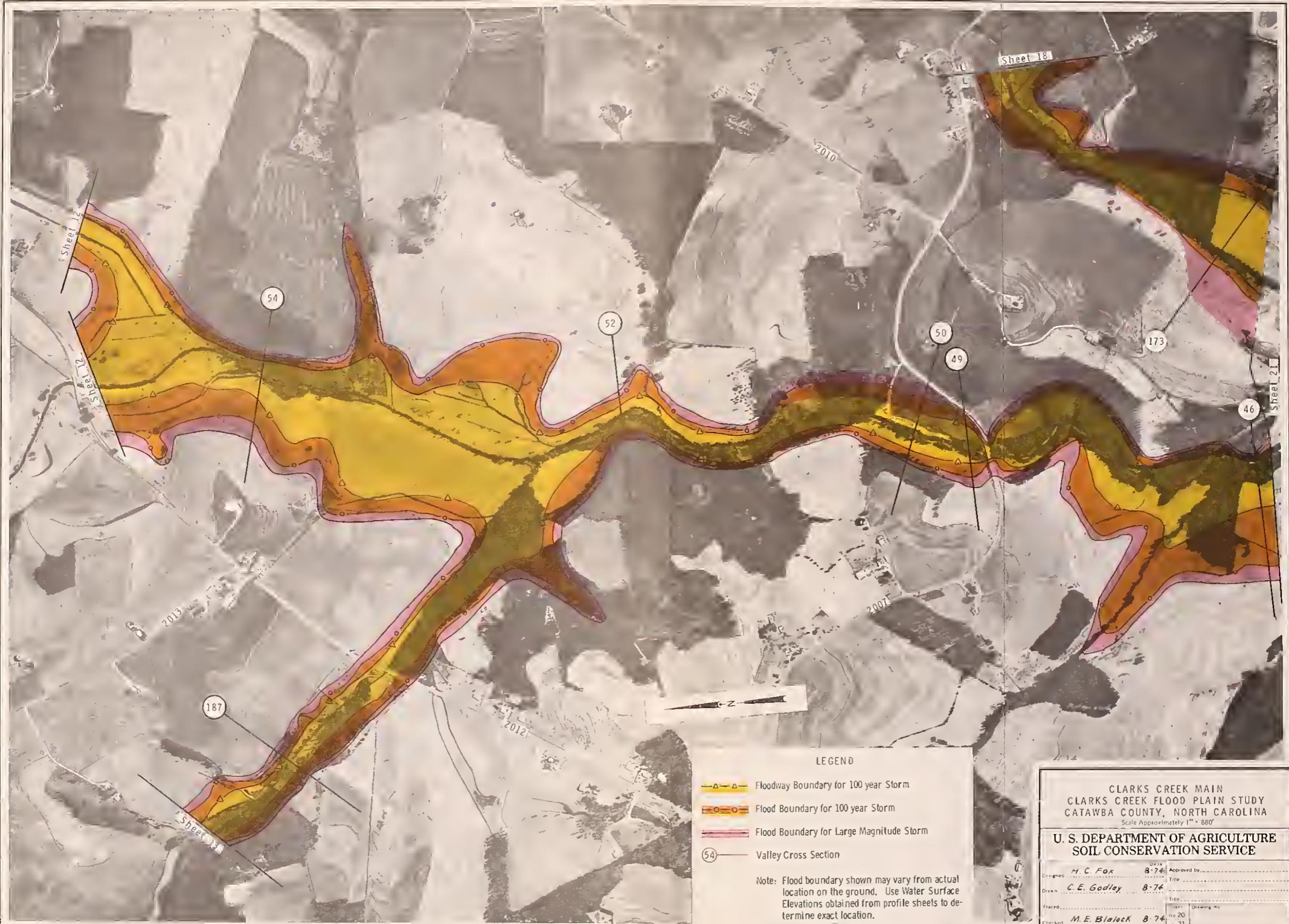
MAIDEN CREEK
CLARKS CREEK FLOOD PLAIN STUDY
CATAWBA COUNTY, NORTH CAROLINA
Scale Approximately 1" = 860'

U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	Date 9-74
Designed by H. C. Fox	Approved by _____
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Checked by M. E. Blalock 9-74	_____

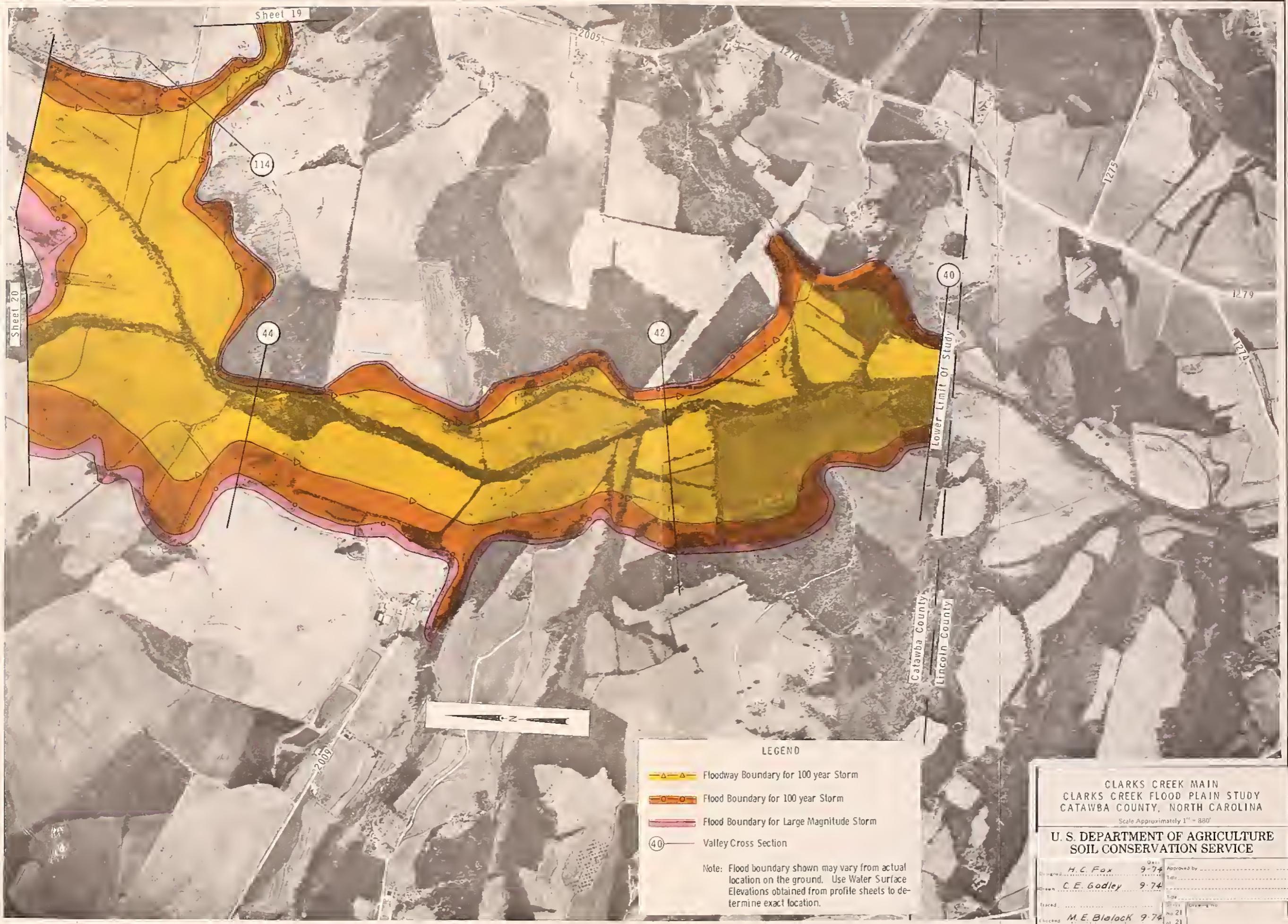




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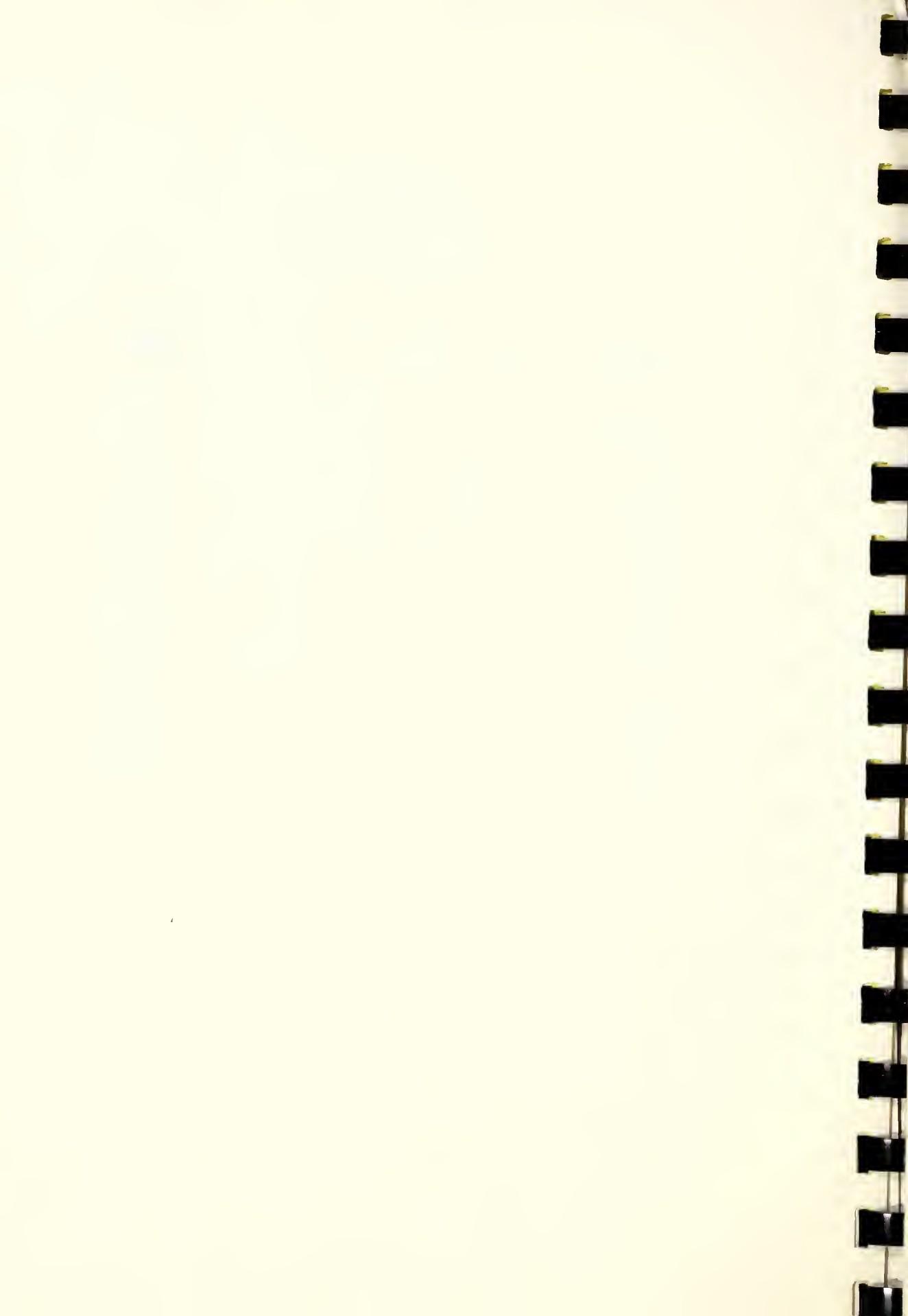
Appendix B
profiles



APPENDIX B

TABLE OF CONTENTS

<u>STREAM</u>	<u>SHEET</u>
Clarks Creek Main	1
Tributary "C"	11
Cline Creek	12
Anthony Creek	13
Smyre Creek	14
Town Creek	16
Bili Creek	17
Betts Creek	18
Pinch Gut	20
Maiden Creek	23
Allen Creek	26
Holly Branch	28



ELEVATIONS - M.S.L.

810

800

790

780

770

750.00

760.00

770.00

780.00

790.00

800.00

810.00

820.00

830.00

840.00

STATIONS in FEET

LEGEND

- Bridge Floor
- Bridge
- Bottom Girder
- - - Stream Bottom
- - - Low Bank
- 100 Year Present Condition
- △—△— 100 Year Future Condition with Floodway
- Large Magnitude Flood (14 inches)
- Valley Cross Section

Left - Middle Creek

X-46

X-4

X-12

X-20

X-28

X-36

X-44

X-52

X-60

810

800

790

780

770

Carrawba County Line
Limit of Study

Clarke Creek Main
HIGH WATER PROFILES
Clarke Creek Flood Plain Study
Catawba County, North Carolina

U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE			
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Drawn	P. Vines, Jr.	Approved by	
Traced		Title	
Checked	H. Holt	Sheet	4-74
		Drawing No.	of 28



ELEVATIONS M.S.L.

820

X-32

810

Jct. Batts Creek

X-32

X-52

X-49

X-38

820

810

800

790

780

770

760

6.60±00

6.70±00

6.80±00

6.90±00

7.00±00

7.10±00

7.20±00

7.30±00

7.40±00

7.50±00

LEGEND

- Bridge Floor
- Bridge
- Bottom Girder
- Stream Bottom
- Low Bank
- 100 Year Present Condition
- △— 100 Year Future Condition with Floodway
- Large Magnitude Flood (14 inches)
- Valley Cross Section

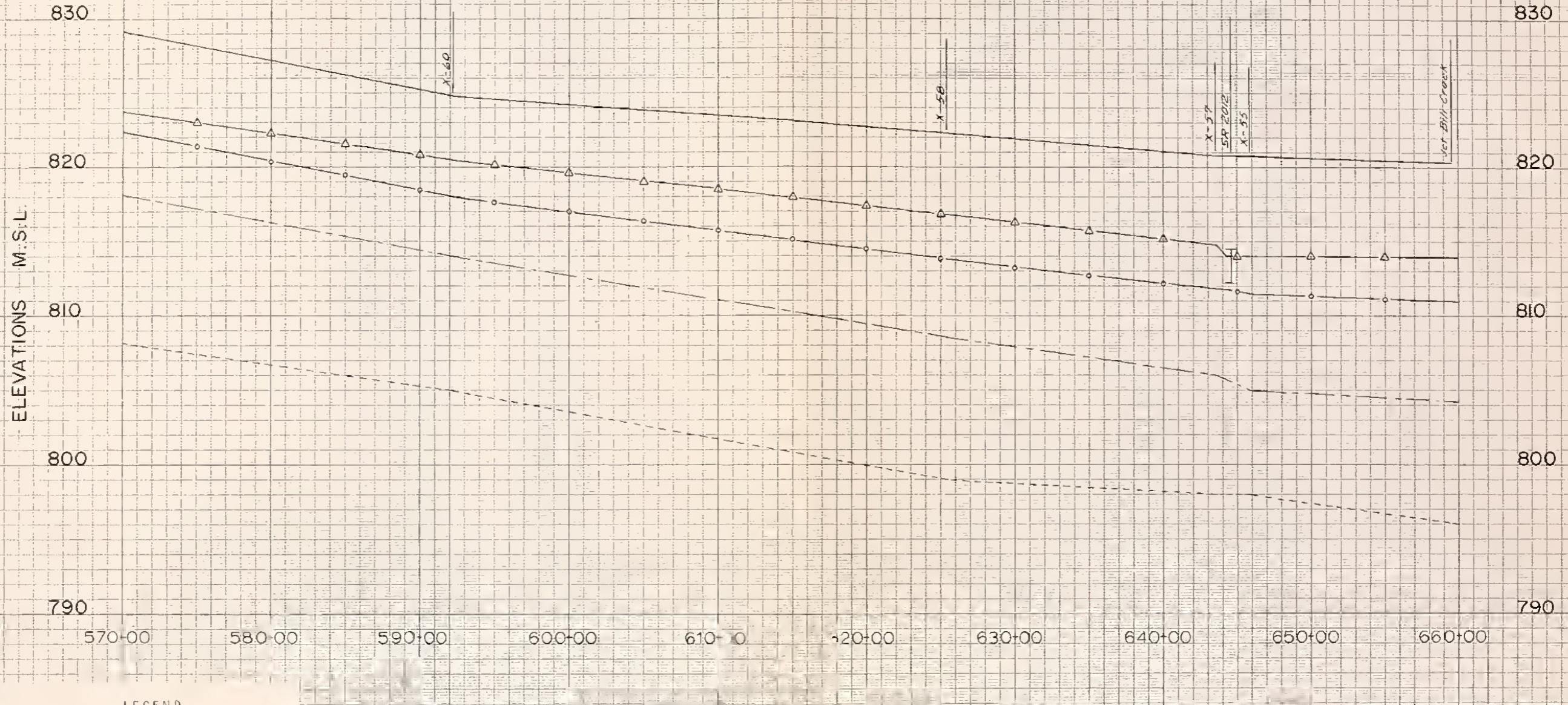
STATIONS in FEET

Clark Creek Main
HIGH WATER PROFILES
Clark Creek Flood Plain Study
Catawba County, North Carolina

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

Date 3-74 Approved by _____
Designed P. Cohen Title _____
Drawn P. Vines, Jr. 3-74
Traced H. Holt 4-74 N. 2
Checked H. Holt 4-74 Drawing No. 28
Sheet 1 of 28





Clark Creek Main
HIGH WATER PROFILES
Clark Creek Flood Plain Study
Catawba County, North Carolina

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

Designed	P. Cohen	Date	3-74
Approved by		Title	
Drawn	P. Vines, Jr.	Date	3-74
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Checked	H. Holt	Date	4-74
	No 3	Sheet	Drawing No
	of 28		



ELEVATIONS M.S.L.

845

830

820

810

800

X-68

X-66

Clarks Creek - 1-24

X-70

40

830

820

810

800

480+00

49 00

500+00

510+00

520+00

530+00

540+00

550+00

560+00

570+00

LEGEND

- Bridge Floor
- Bridge
- Bottom Girder
- Stream Bottom
- Low Bank
- 100 Year Present Condition
- △—△ 100 Year Future Condition with Floodway
- Large Magnitude Flood (14 inches)
- Valley Cross Section

STATION in FEET

Clarks Creek Main
HIGH WATER PROFILES
Clarks Creek Flood Plain Study
Catawba County, North Carolina

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

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Drawn	P. Vines, Jr.	3-74	Title
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Checked		No. 4	of 28



ELEVATIONS - M.S.L.

860

850

840

830

820

390-0

400-00

410-00

420-00

430-00

440-00

50-00

460-00

470-0

480-0

60

55

40

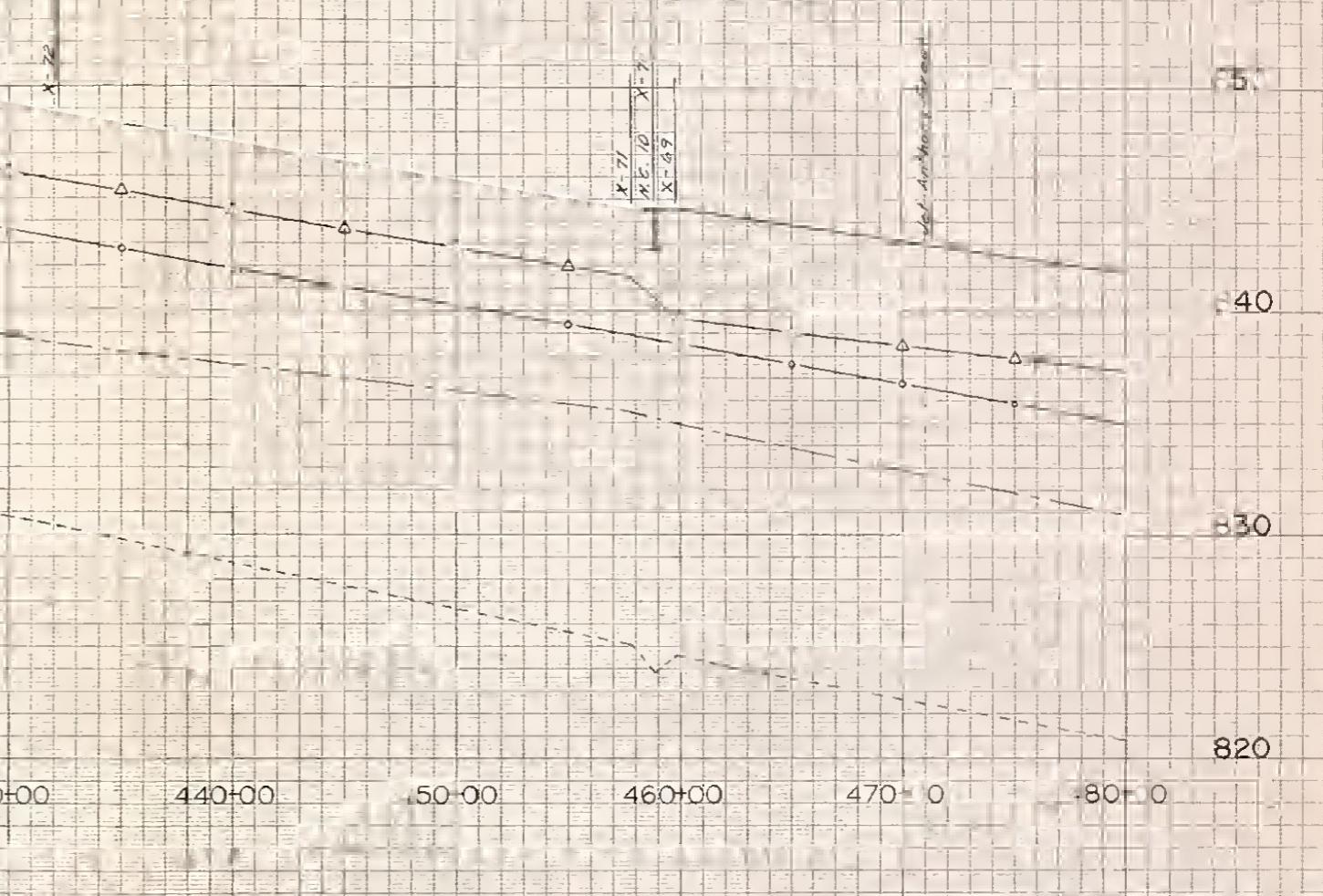
350

320

LEGEND

- Bridge Floor
- Bridge
- Bottom Girder
- Stream Bottom
- Low Bank
- 100 Year Present Condition
- △—△ 100 Year Future Condition with Floodway
- Large Magnitude Flood (14 inches)
- Valley Cross Section

STATIONS in FEET



Clark Creek Main
HIGH WATER PROFILES
Clark Creek Flood Plain Study
Catawba County, North Carolina

U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE		
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Titled	Drawing No. 5	
Checked	H. Holt	4-74



ELEVATIONS M.S.L.

870

860

850

840

830

300+00

310+00

320+00

330+00

340+00

350+00

360+00

370+00

380+00

390+00

870

860

850

840

830

Yer Cane Creek

X-74

X-82

SP 763

X-84

X-81

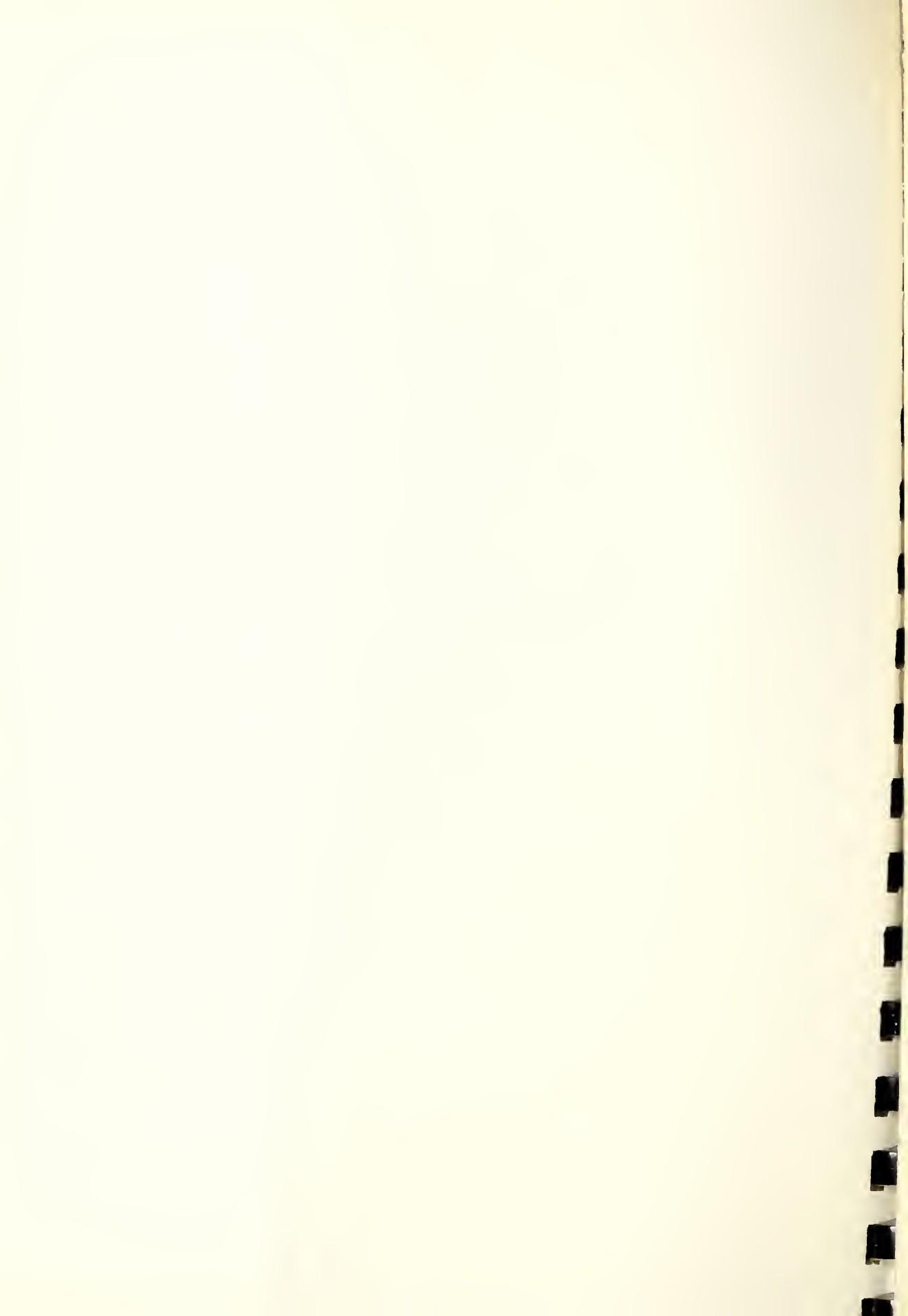
LEGEND

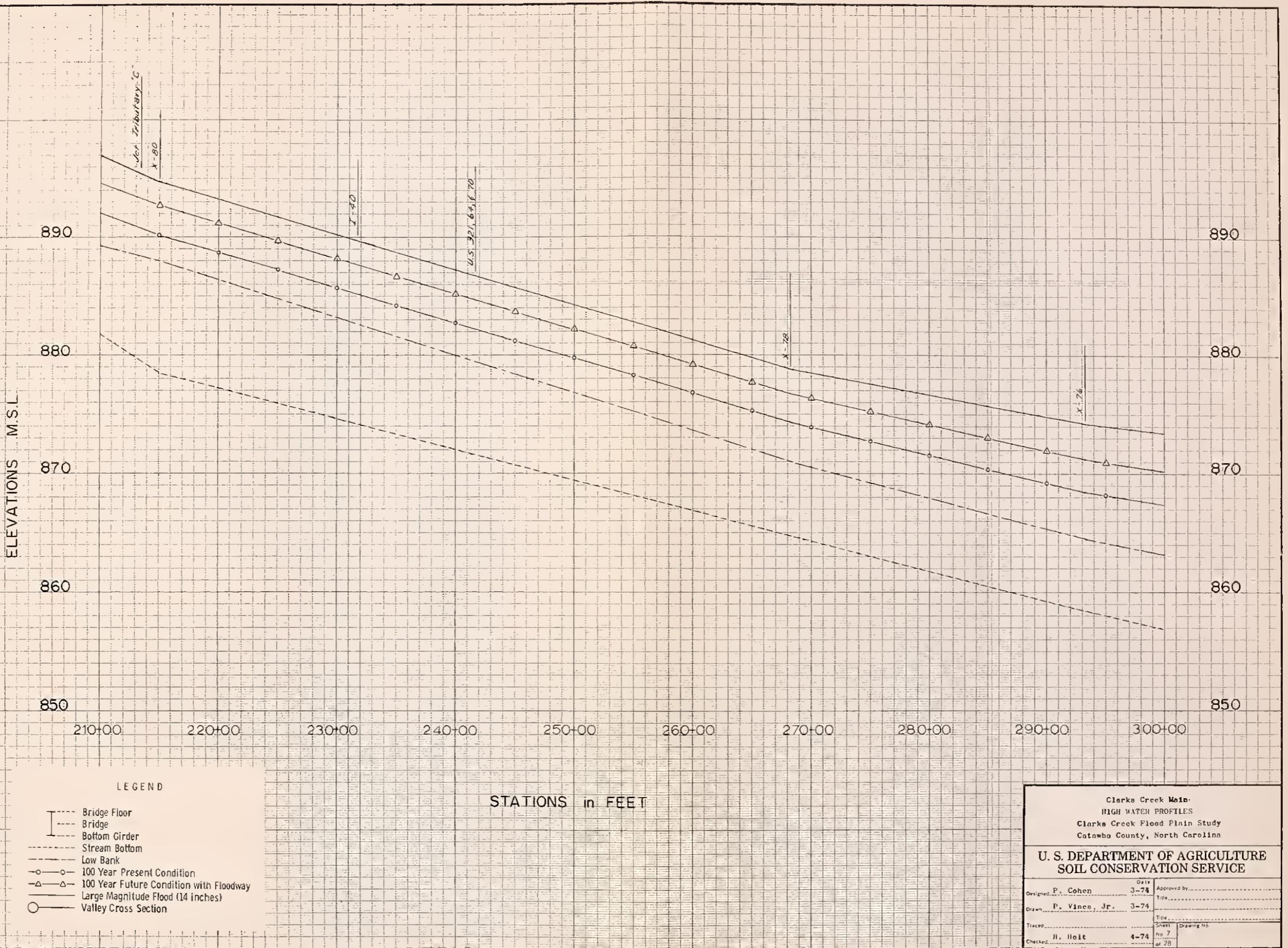
- Bridge Floor
- - - Bridge
- - Bottom Girder
- - Stream Bottom
- - Low Bank
- - ○ 100 Year Present Condition
- △ - △ 100 Year Future Condition with Floodway
- Large Magnitude Flood (14 inches)
- Valley Cross Section

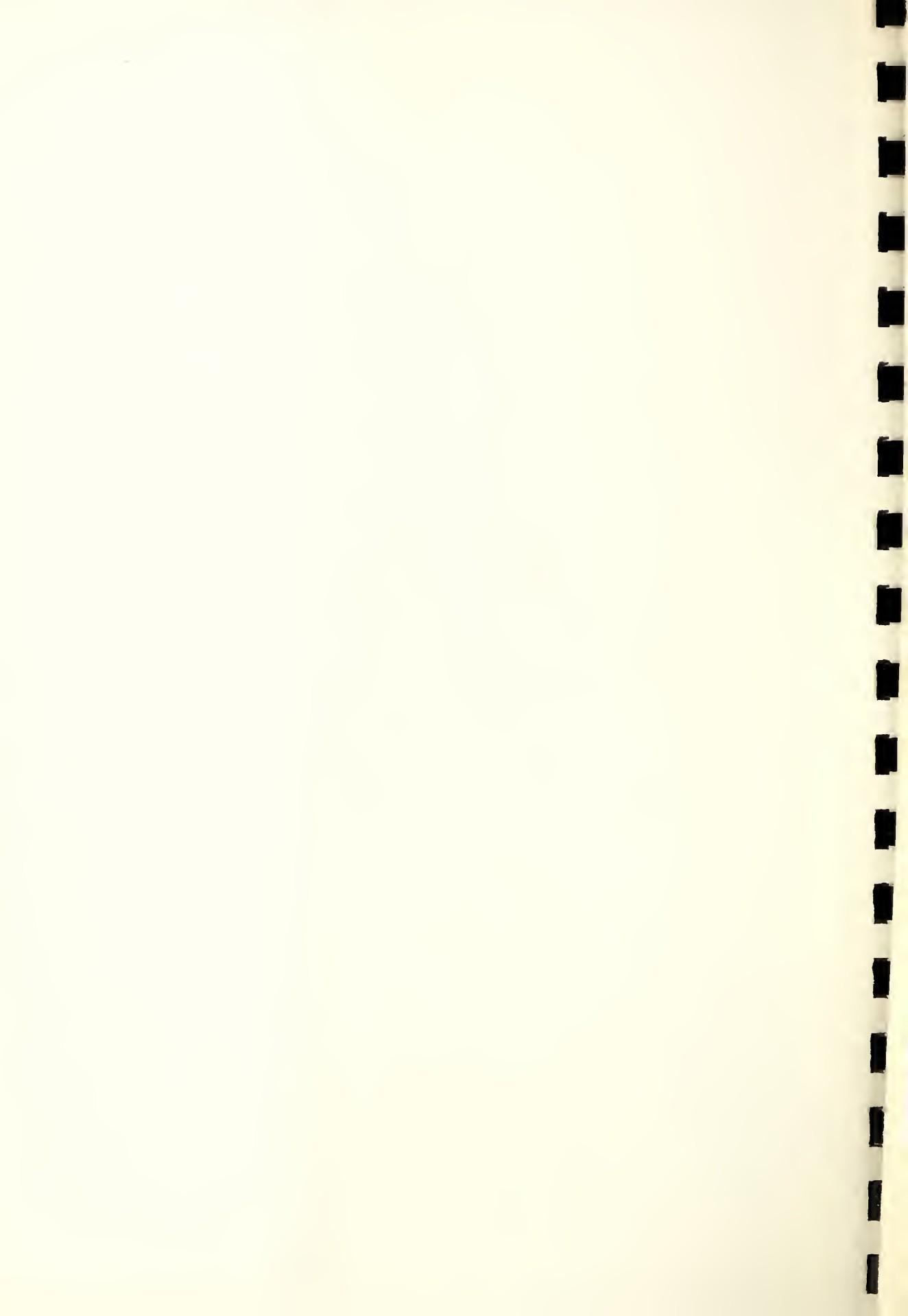
STATIONS in FEET

Clark Creek Main
HIGH WATER PROFILES
Clark Creek Flood Plain Study
Catawba County, North Carolina

U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE		
Designed	P. Gobed	Date 3-74
Drawn	P. Vinen, Jr.	Approved by _____ Title _____
Traced		Sheet Drawing No _____
Checked	H. Holt	No 6 of 28







ELEVATIONS M.S.L.

930

920

910

900

890

880

120+00

130+00

140+00

150+00

160+00

170+00

180+00

190+00

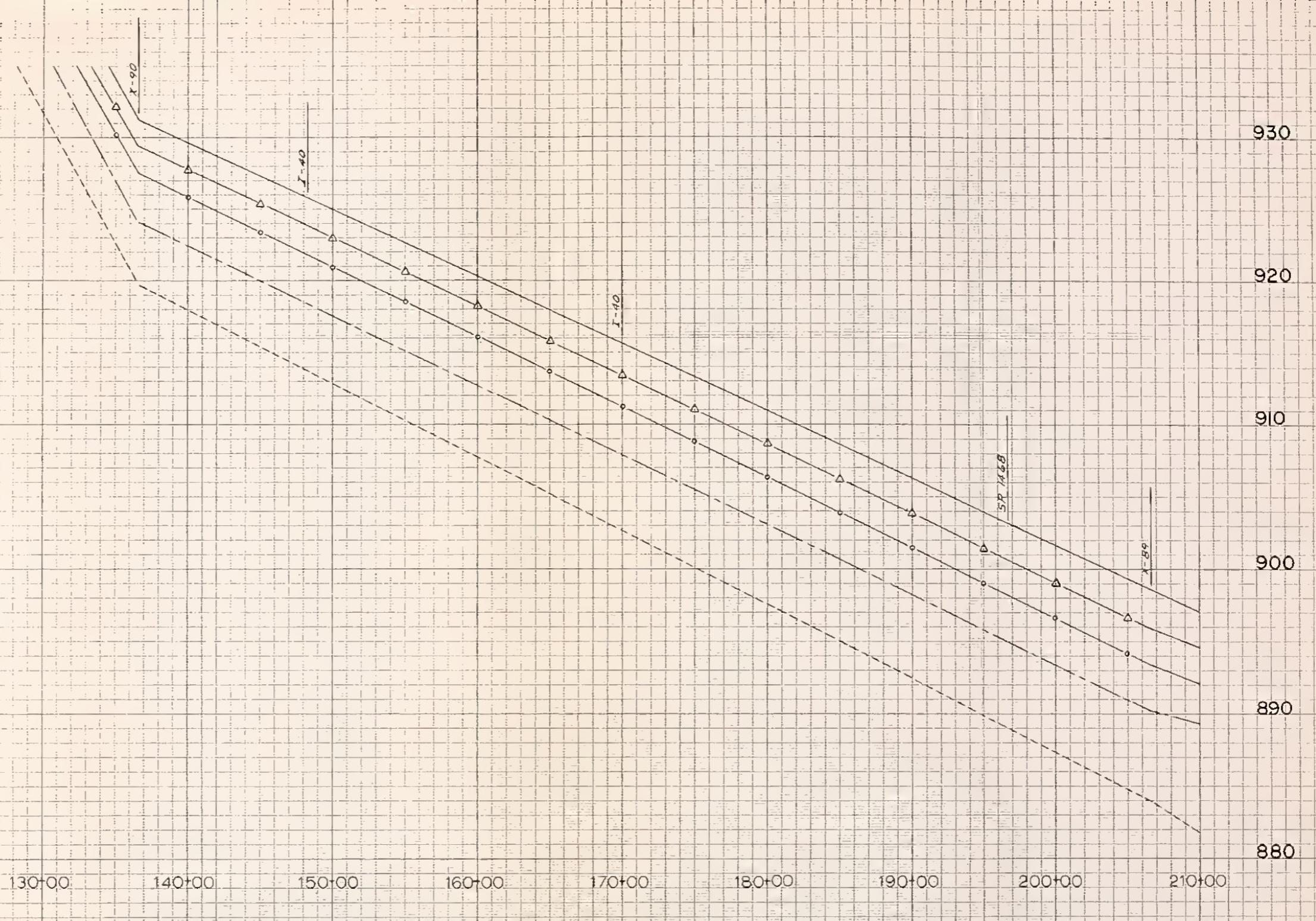
200+00

210+00

LEGEND

- Bridge Floor
- - - Bridge
- - - Bottom Girder
- - - Stream Bottom
- - - Low Bank
- ○ 100 Year Present Condition
- △ △ 100 Year Future Condition with Floodway
- Large Magnitude Flood (14 inches)
- Valley Cross Section

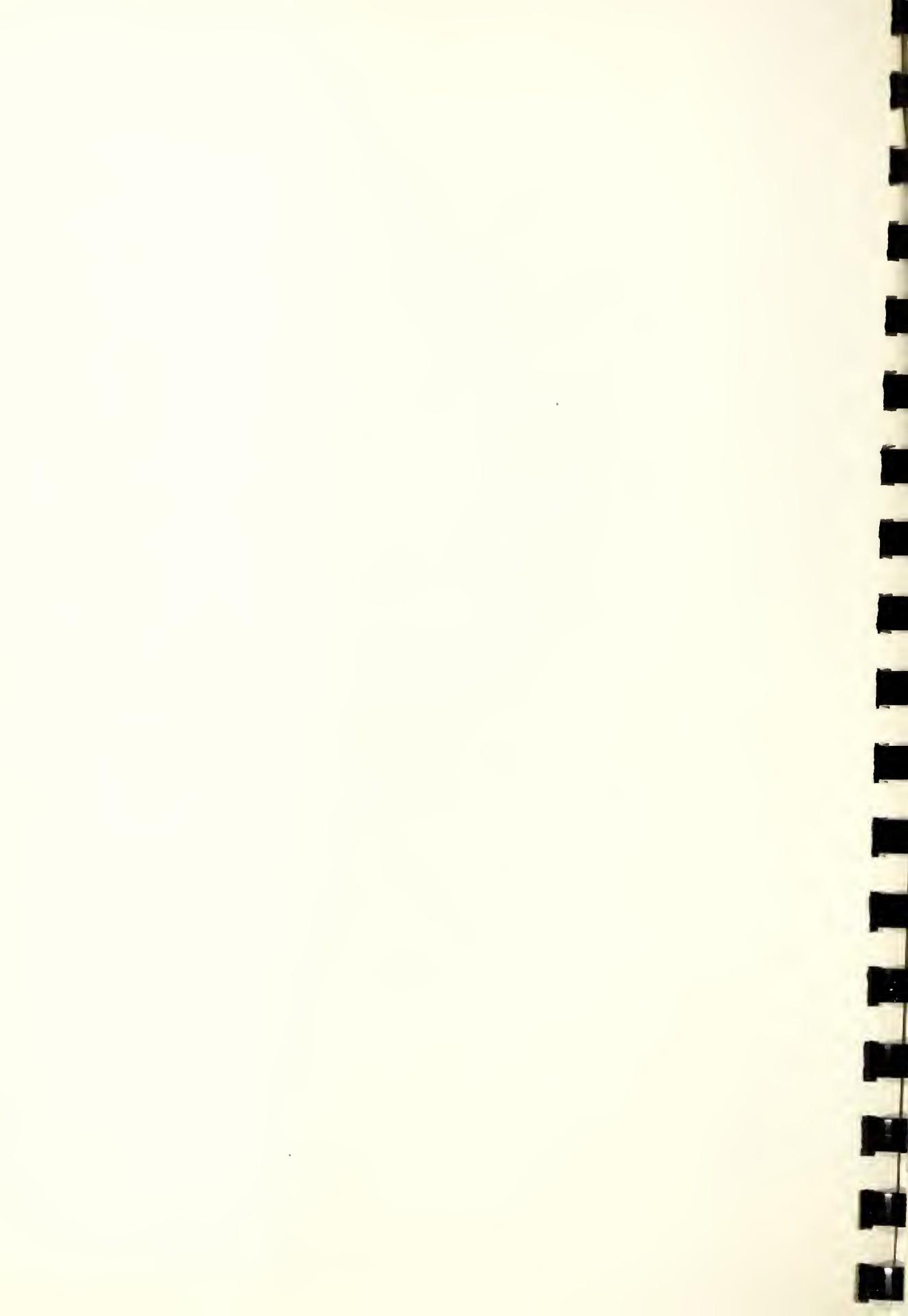
STATIONS in FEET

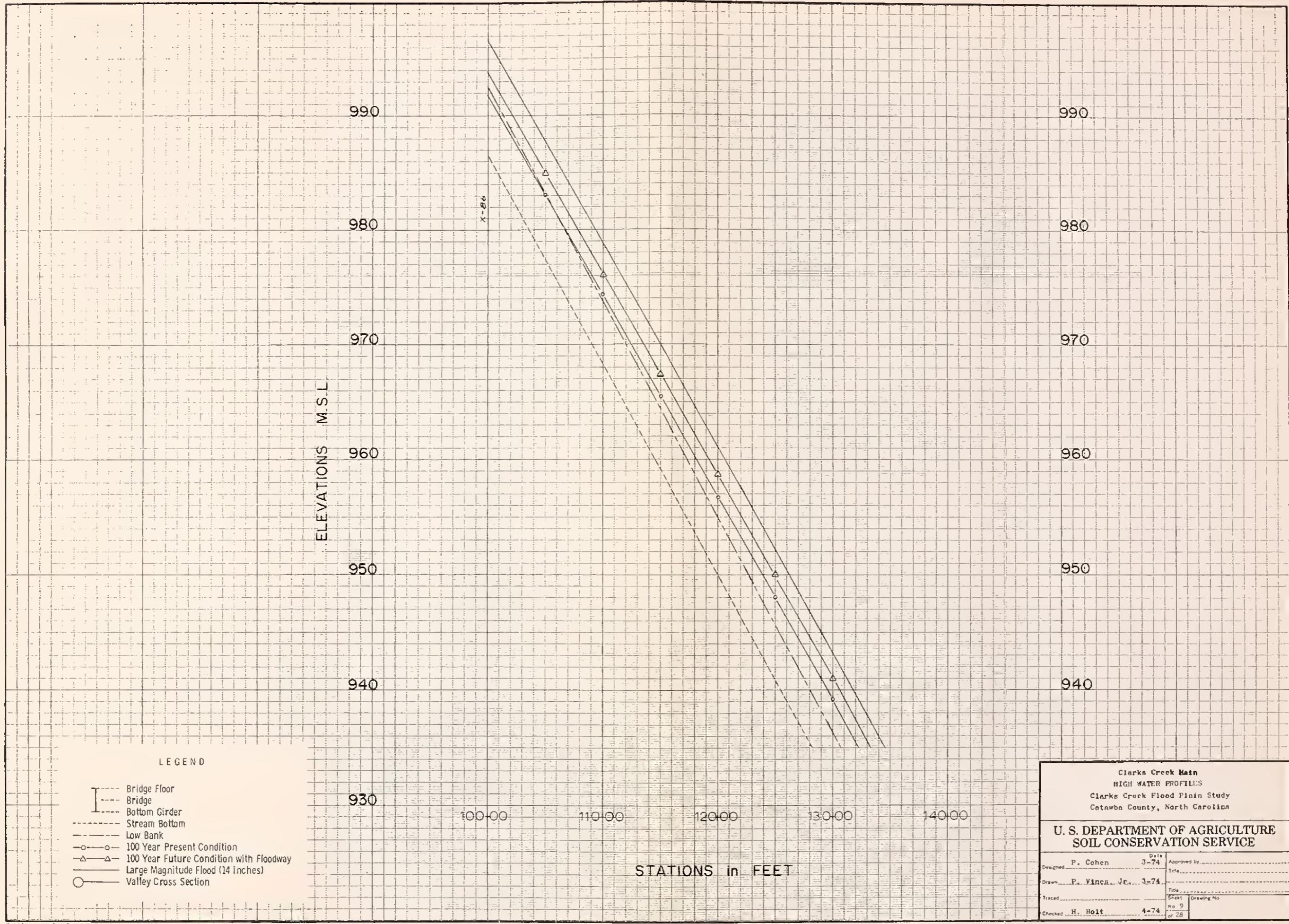


Clark Creek Main
HIGH WATER PROFILES
Clark Creek Flood Plain Study
Catawba County, North Carolina

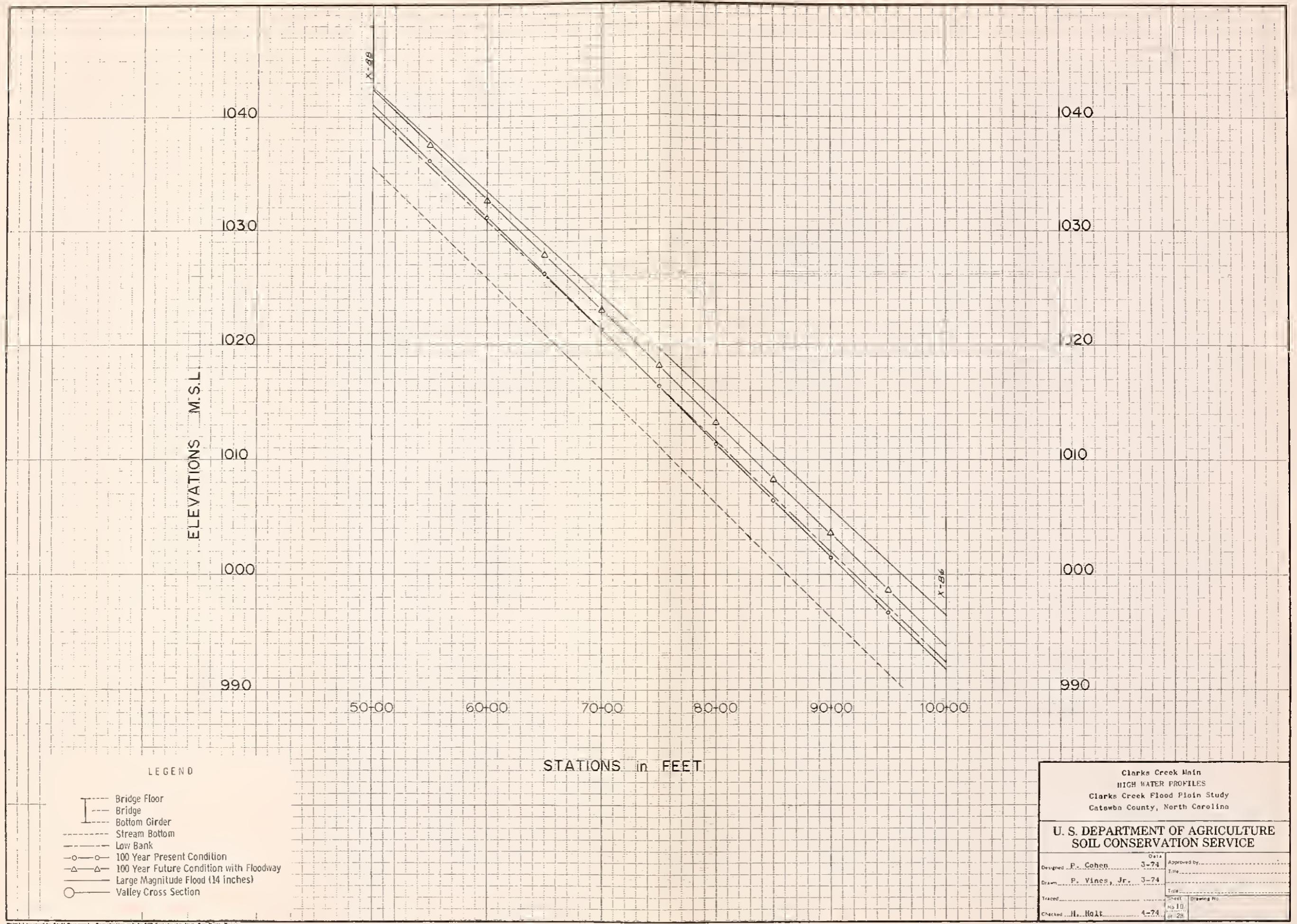
U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

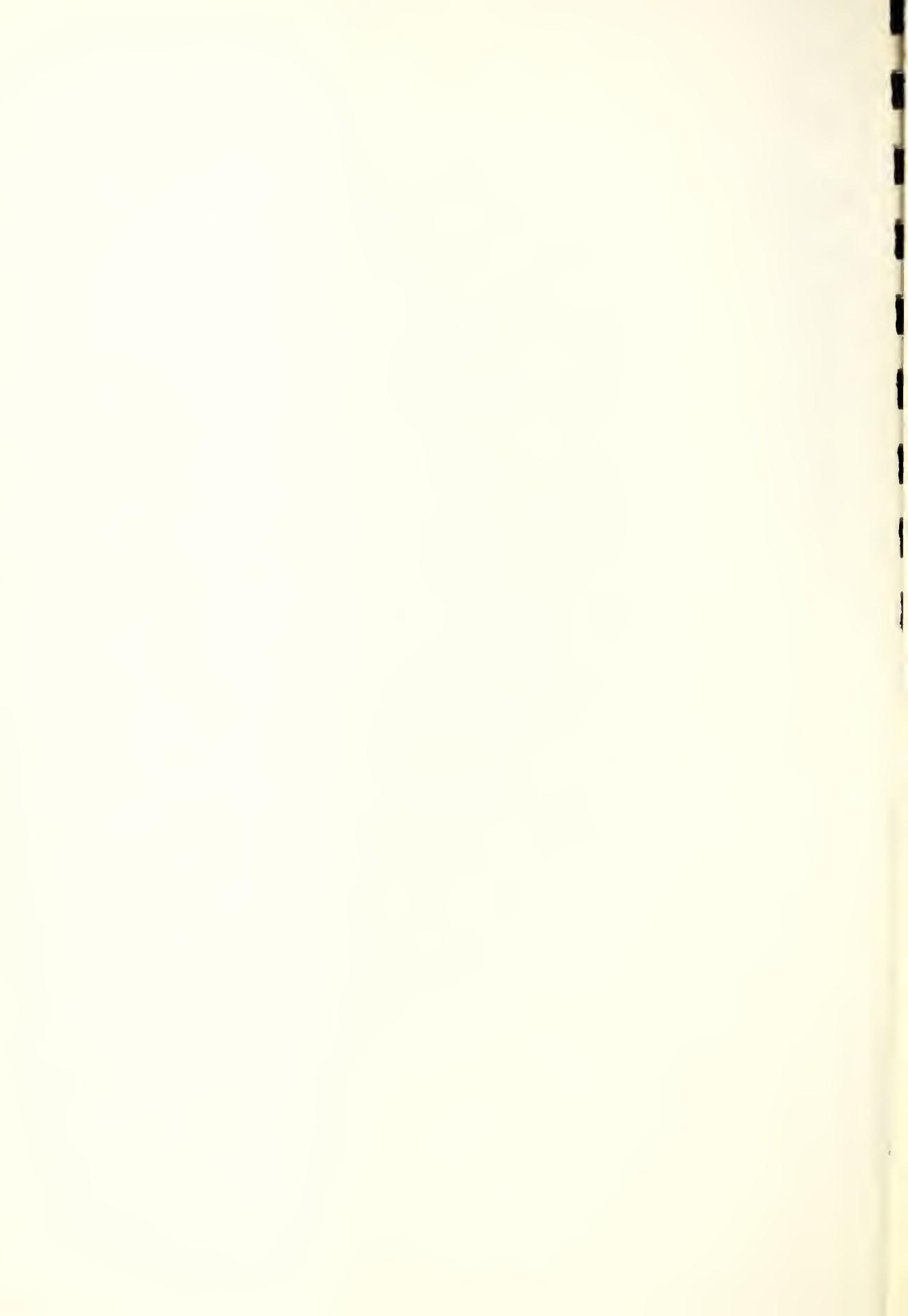
Designed	P. Cohen	3-74	Approved by
Drawn	P. Vines, Jr.	3-74	Title
Traced			Date
Checked	H. Holt	4-74	Drawing No
	No 8		at 28

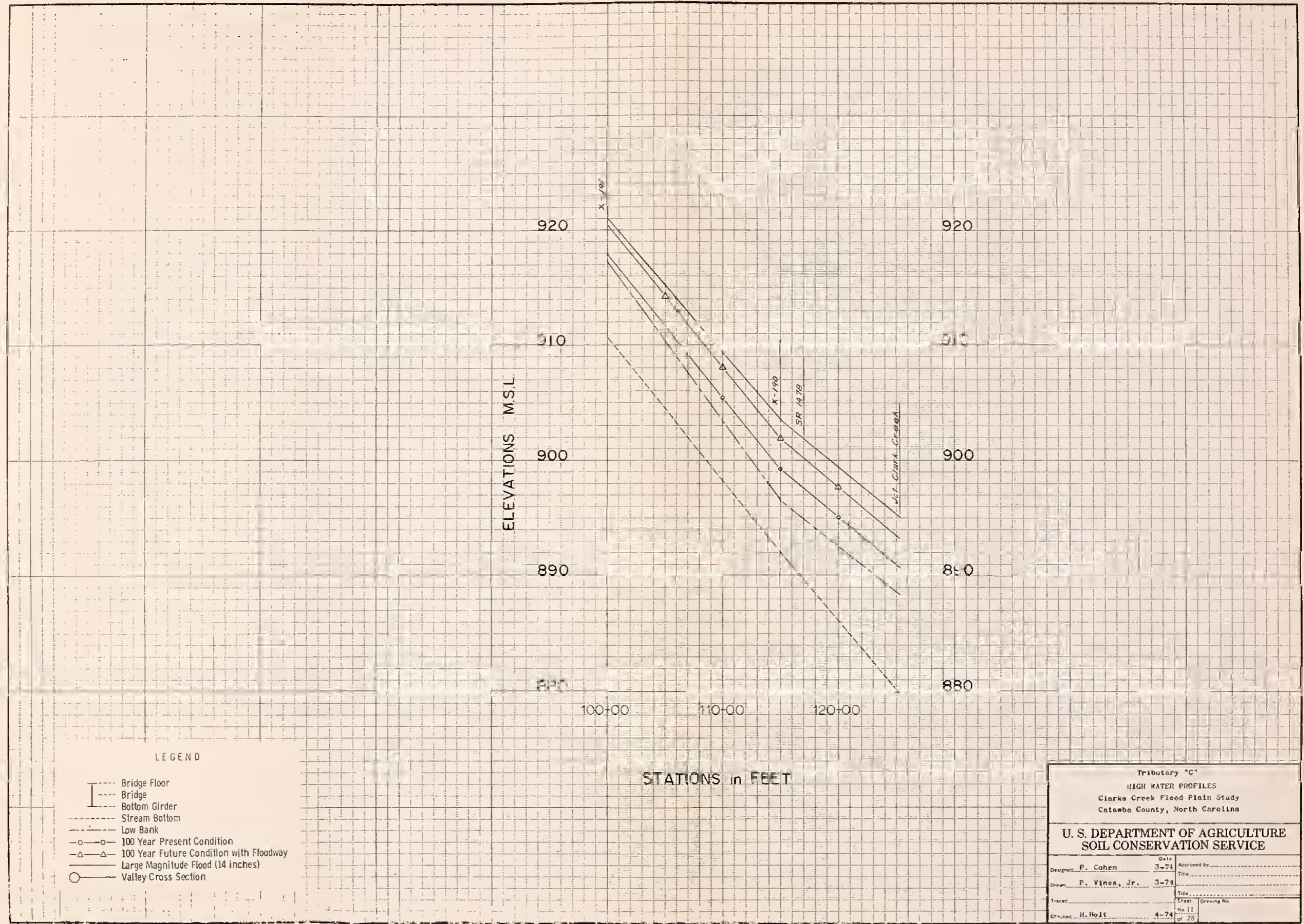




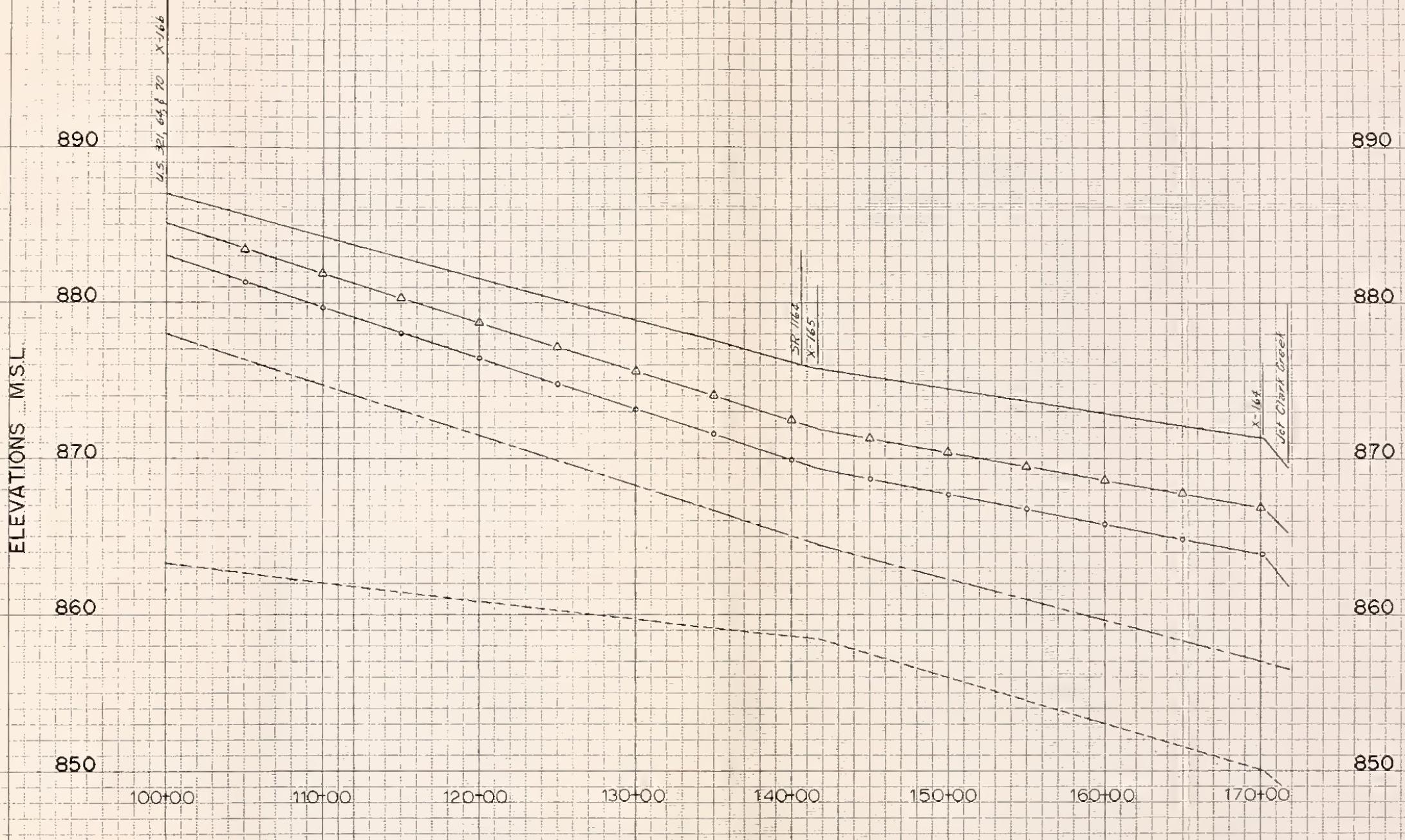












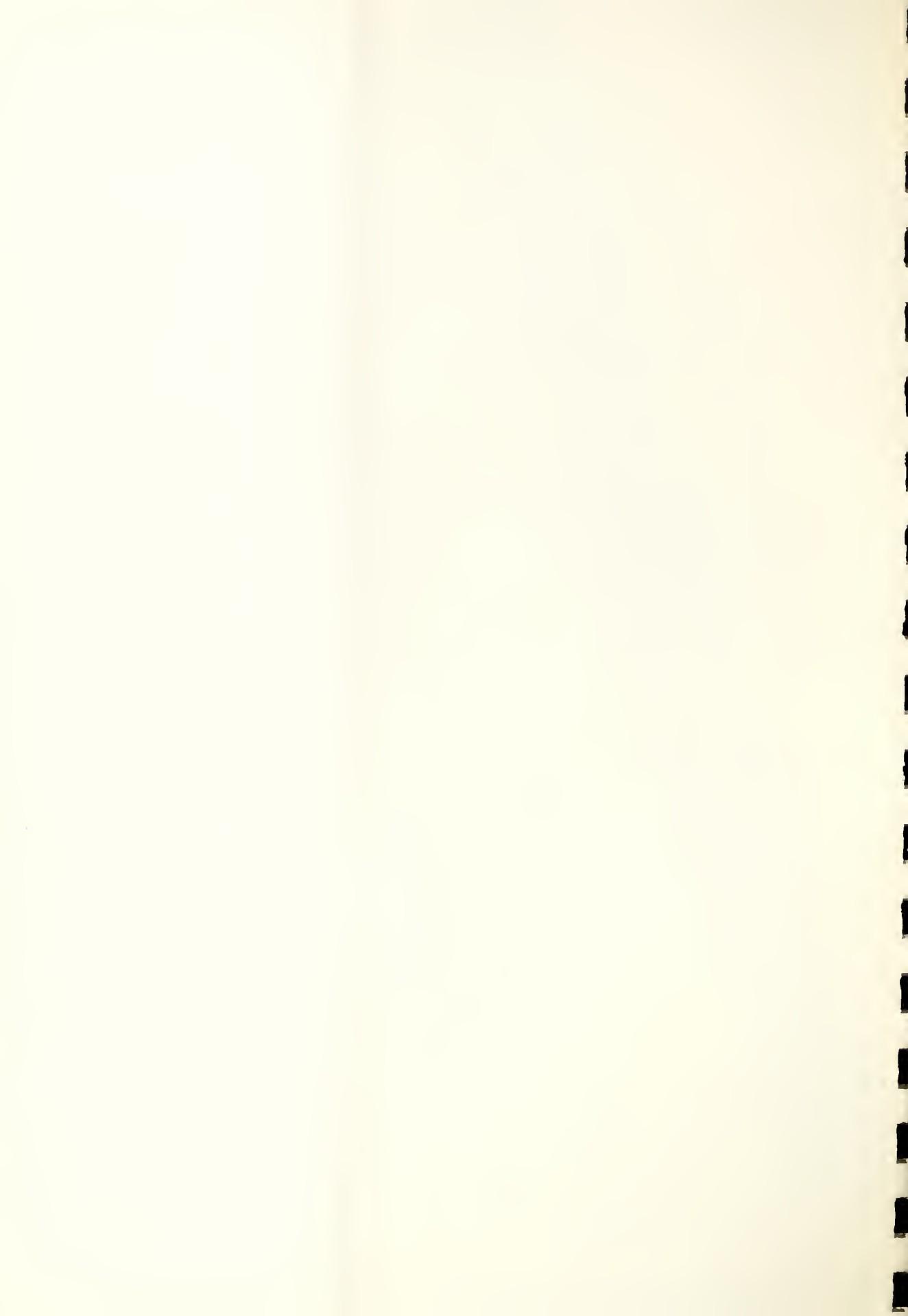
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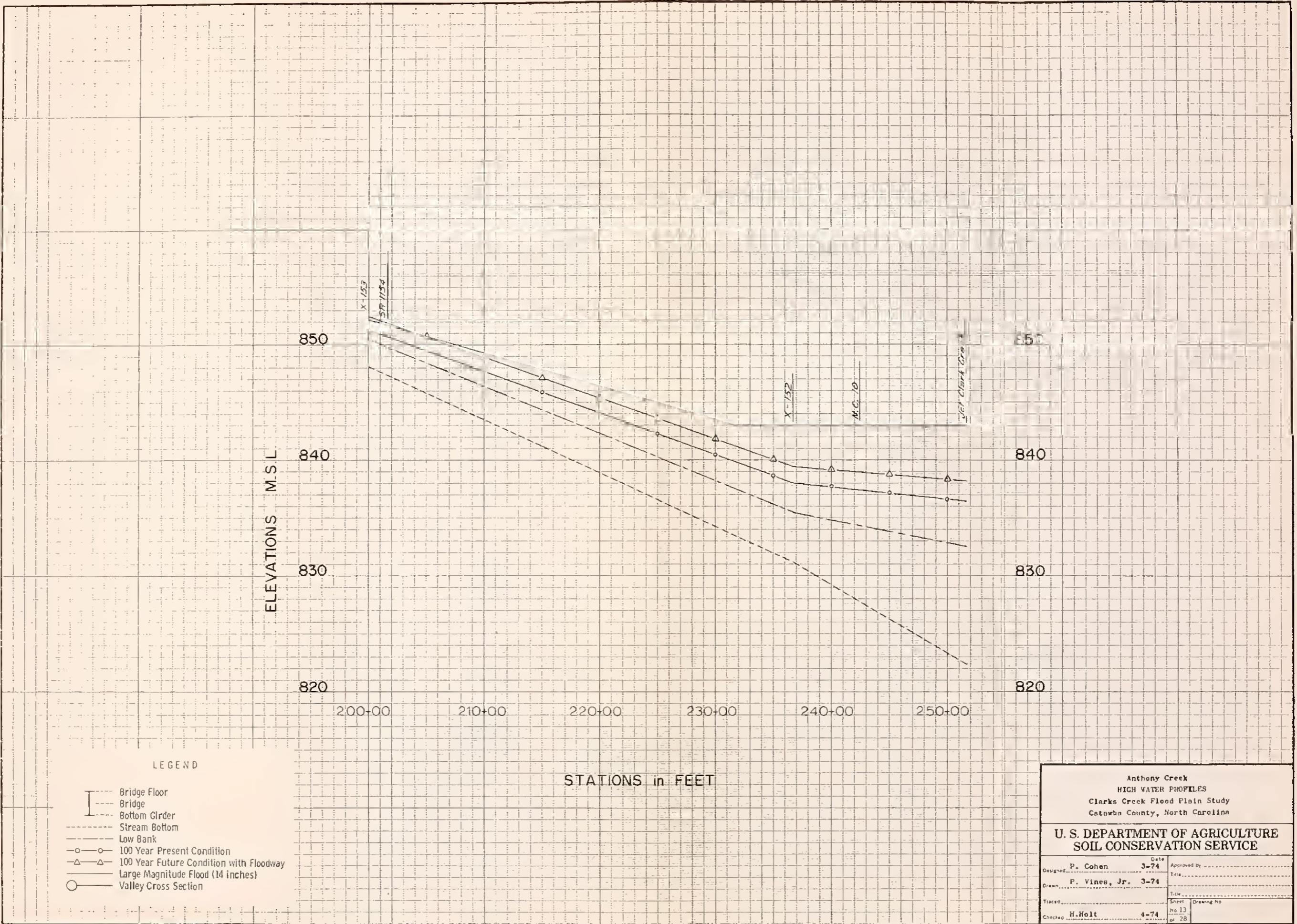
- Bridge Floor
- Bridge
- Bottom Girder
- Stream Bottom
- Low Bank
- 100 Year Present Condition
- △—△ 100 Year Future Condition with Floodway
- Large Magnitude Flood (14 inches)
- Valley Cross Section

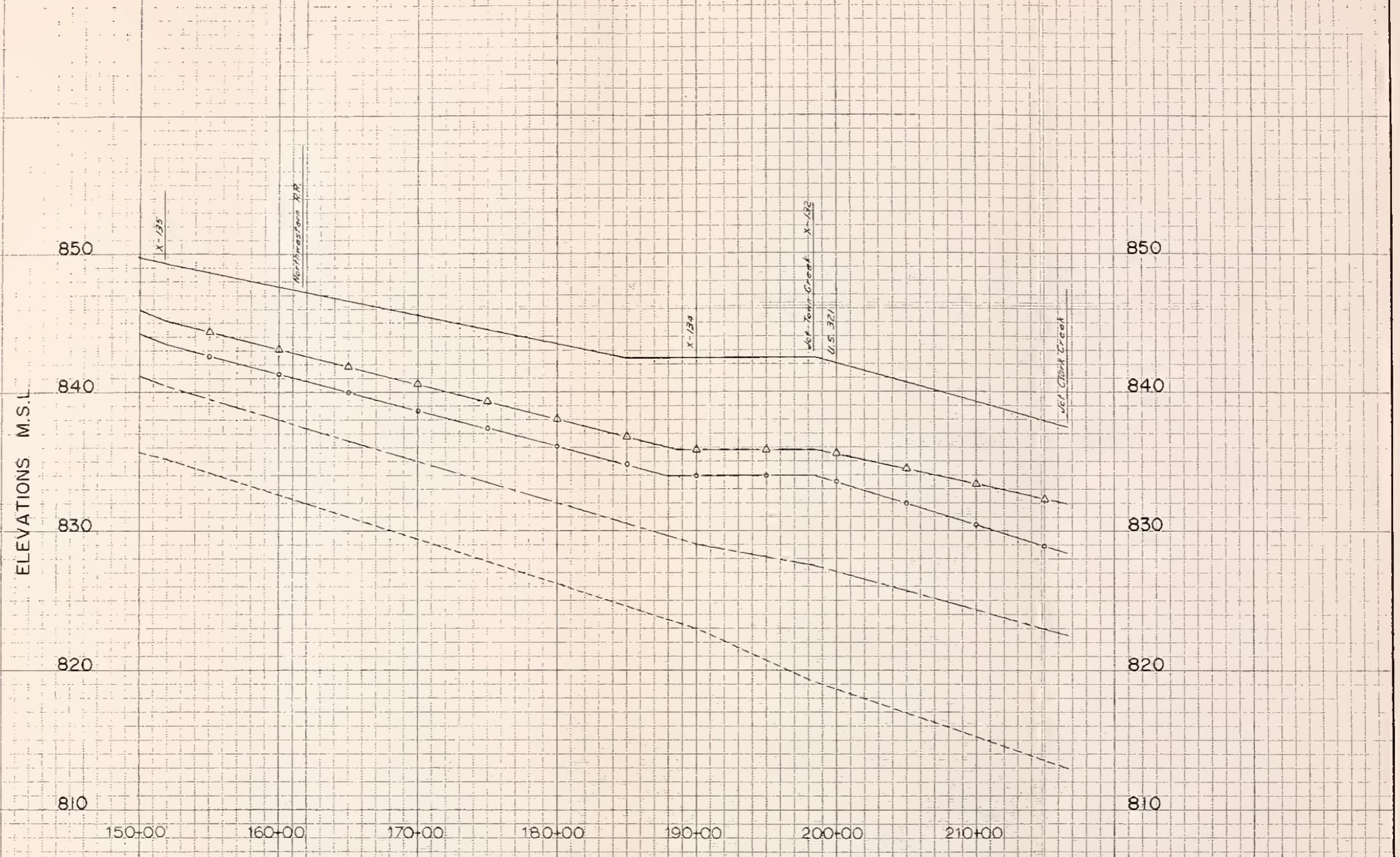
STATIONS in FEET

Cline Creek
HIGH WATER PROFILES
Clarks Creek Flood Plain Study
Catawba County, North Carolina

U. S. DEPARTMENT OF AGRICULTURE		
SOIL CONSERVATION SERVICE		
Designed	P. Cohen	Date 3-74 Approved by
Drawn	P. Vines, Jr.	Date
Traced		Date
Checked	H. Holt	Sheet Drawing No
		No 12 of 28





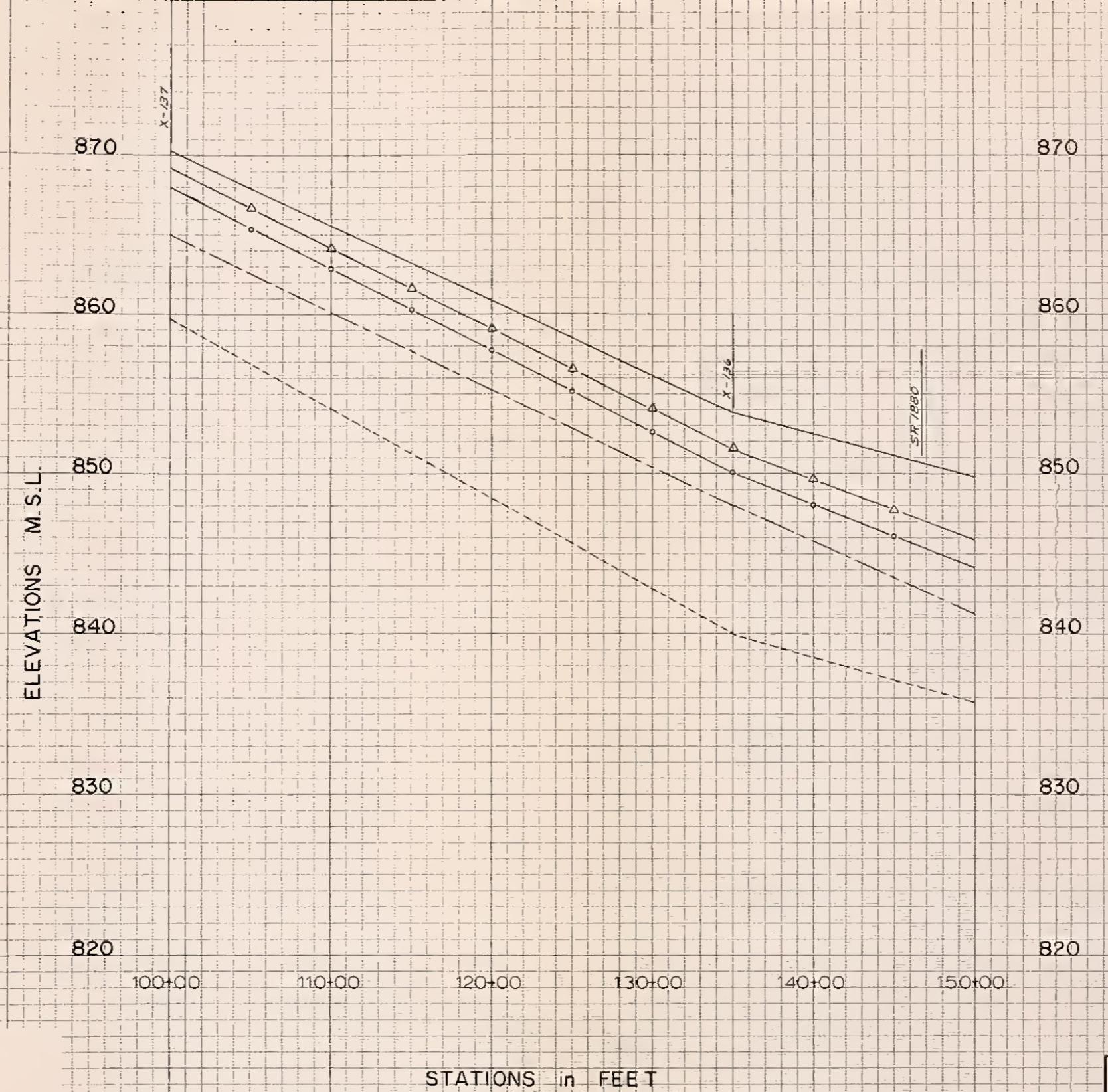


STATIONS in FEET

Soyre Creek
HIGH WATER PROFILES
Clarks Creek Flood Plain Study
Catawba County, North Carolina

U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE		
Designed	P. Cohen	Date 3-74 Approved by _____
Drawn	P. Vines, Jr.	3-74 Title _____
Traced		Title _____
Checked	H. Holt	Sheet No. 14 Drawing No. 4-74 of 28





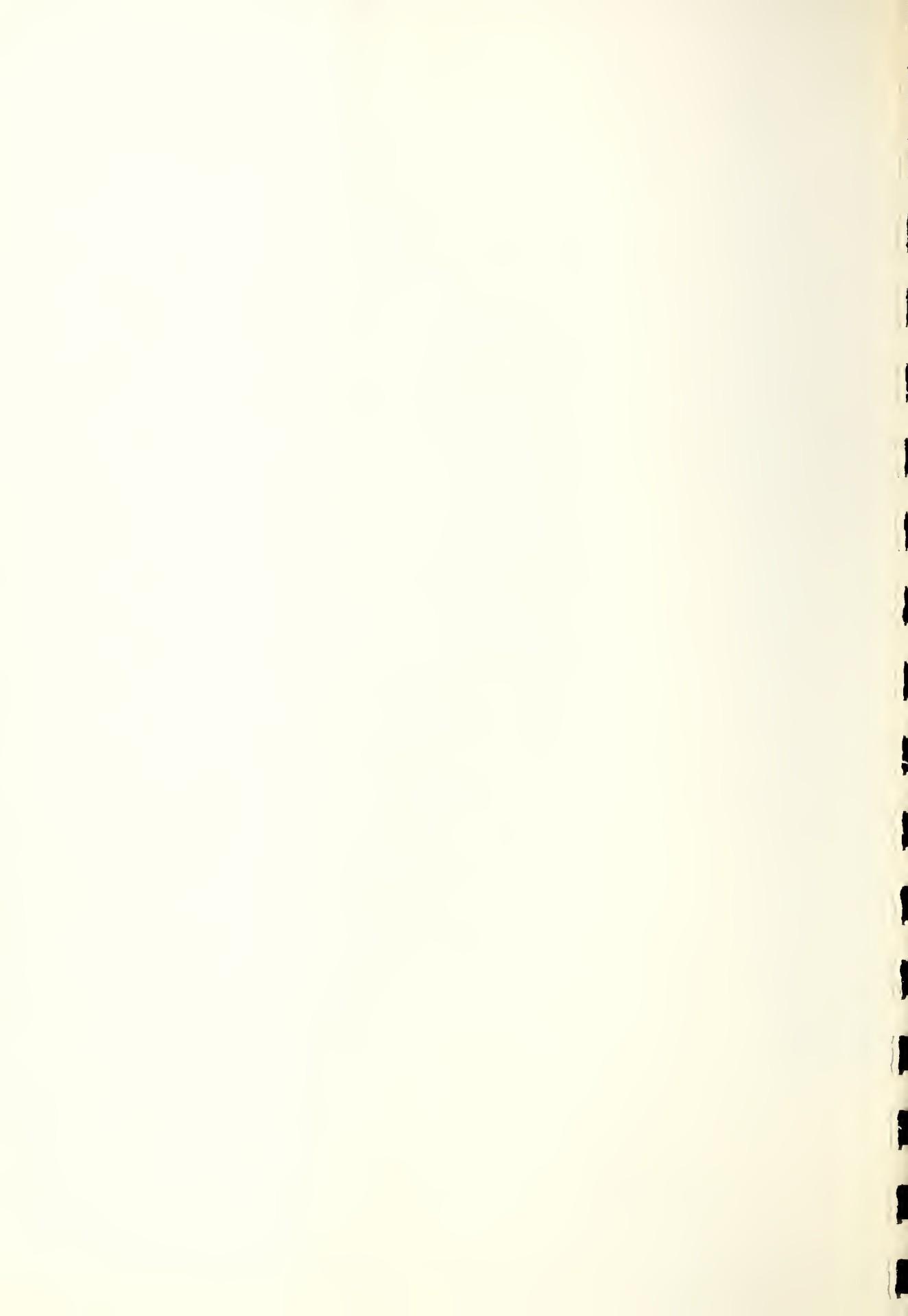
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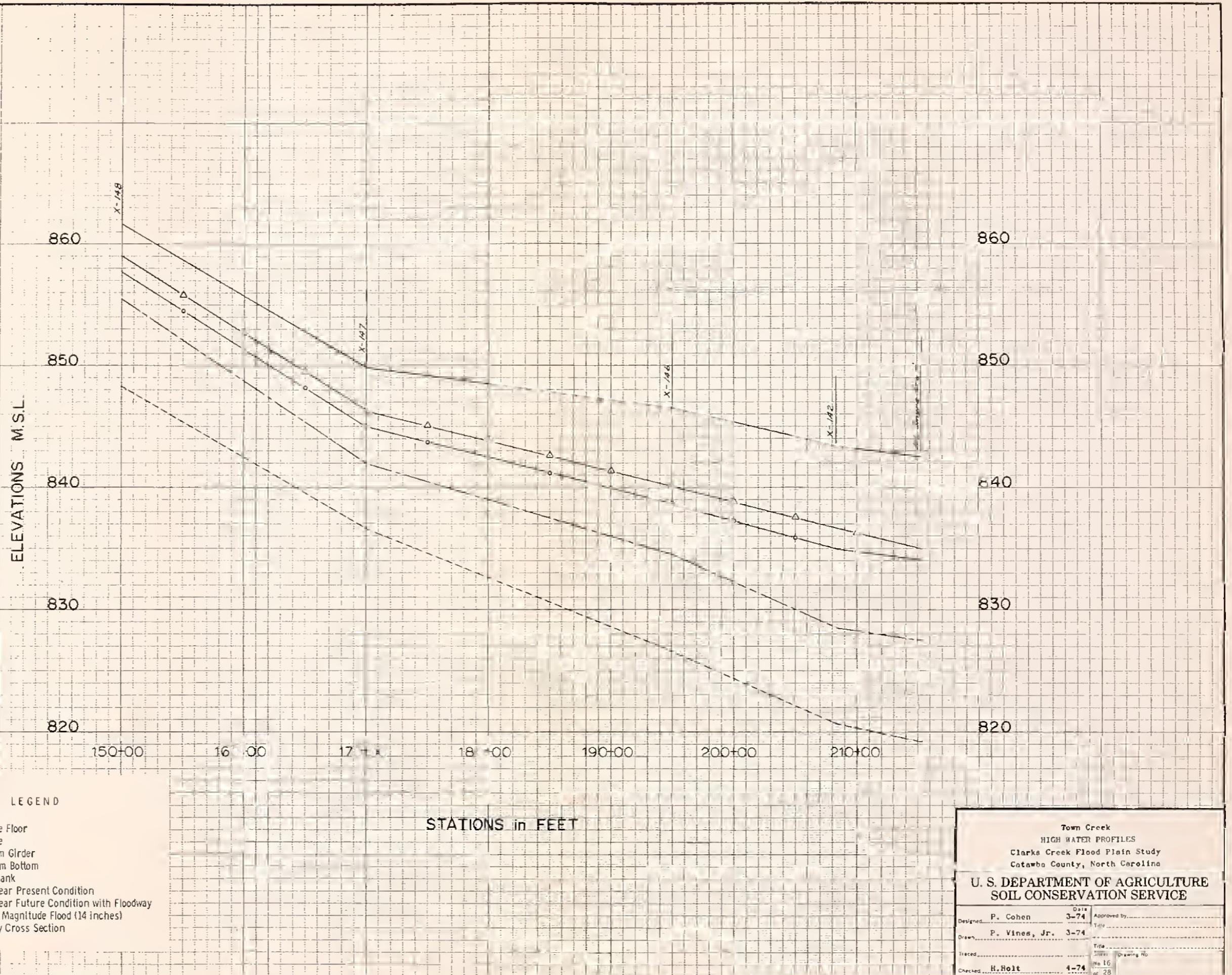
- Bridge Floor
- Bridge
- Bottom Girder
- Stream Bottom
- Low Bank
- 100 Year Present Condition
- △—△ 100 Year Future Condition with Floodway
- Large Magnitude Flood (14 inches)
- Valley Cross Section

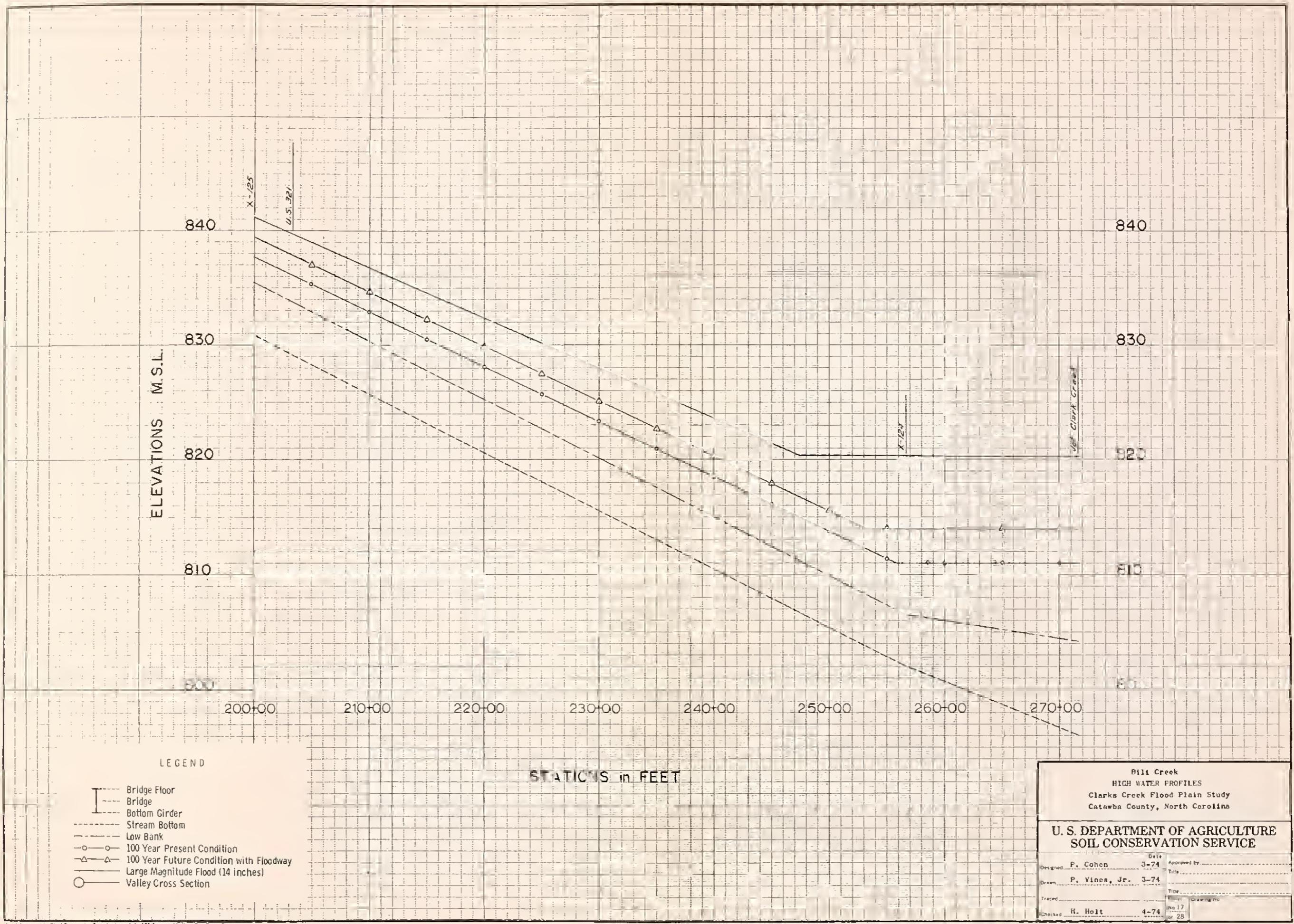
STATIONS in FEET

Smyre Creek
HIGH WATER PROFILES
Clarks Creek Flood Plain Study
Catawba County, North Carolina

U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE		
Designed	P. Cohen	Date 3-74 Approved by _____
Drawn	P. Vines, Jr.	Date 3-74 Title _____
Treed		Title _____
Checked	H. Holt	No. 15 of 28 Drawing No. _____



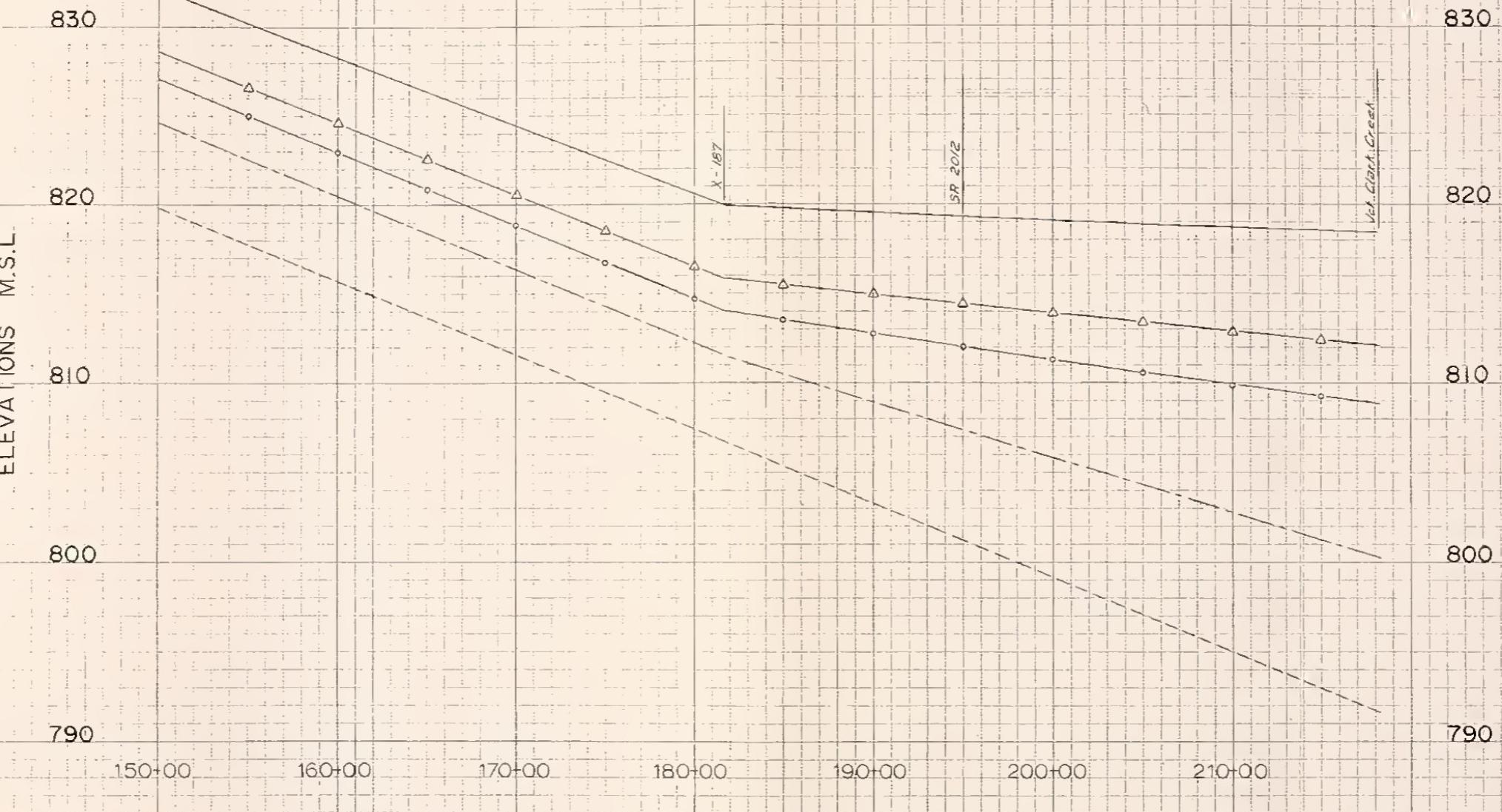






LEGEND

- Bridge Floor
- - - - - Bridge
- - - Bottom Girder
- - - Stream Bottom
- - - Low Bank
- - ○ 100 Year Present Condition
- △ - △ 100 Year Future Condition with Floodway
- Large Magnitude Flood (14 inches)
- — Valley Cross Section



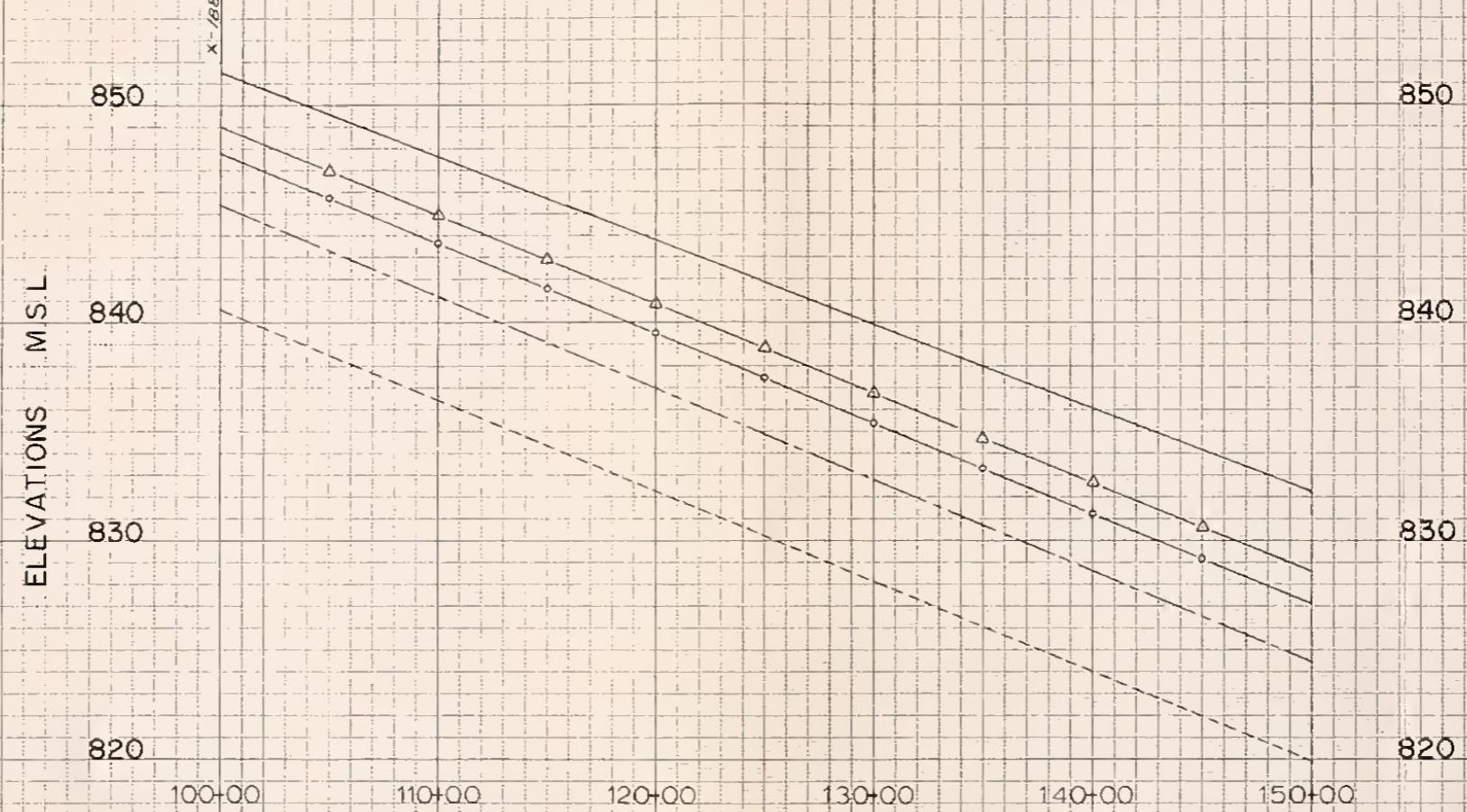
STATIONS in FEET

Betts Creek
HIGH WATER PROFILES
Clarks Creek Flood Plain Study
Catawba County, North Carolina

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

Drawn by	P. Cohen	Date	3-74	Approved by
Drawn by	P. Vines, Jr.	Date	3-74	Approved by
Checked by		Date		
Checked by	H. Holt	Date	4-74	Drawing No. No 18 of 28





LEGEND

- Bridge Floor
- Bridge
- Bottom Girder
- Stream Bottom
- Low Bank
- ○ 100 Year Present Condition
- △ △ 100 Year Future Condition with Floodway
- Large Magnitude Flood (14 inches)
- Valley Cross Section

STATIONS in FEET

Bett's Creek
HIGH WATER PROFILES
Clarks Creek Flood Plain Study
Catawba County, North Carolina

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

Designed by	Date	Approved by
P. Cohen	3-74	P. Vines, Jr.
Drawn	3-74	3-74
Traced	H. Holt	4-74
Checked	no 19	no 28



ELEVATIONS MSL

830

820

810

800

790

250+00

260+00

270+00

280+00

290+00

300+00

STATIONS in FEET

830

820

810

800

790

LEGEND

- Bridge Floor
- Bridge
- Bottom Girder
- Stream Bottom
- Low Bank
- 100 Year Present Condition
- △—△ 100 Year Future Condition with Floodway
- Large Magnitude Flood (14 inches)
- Valley Cross Section

U.S. 321
West Mountain R.R.

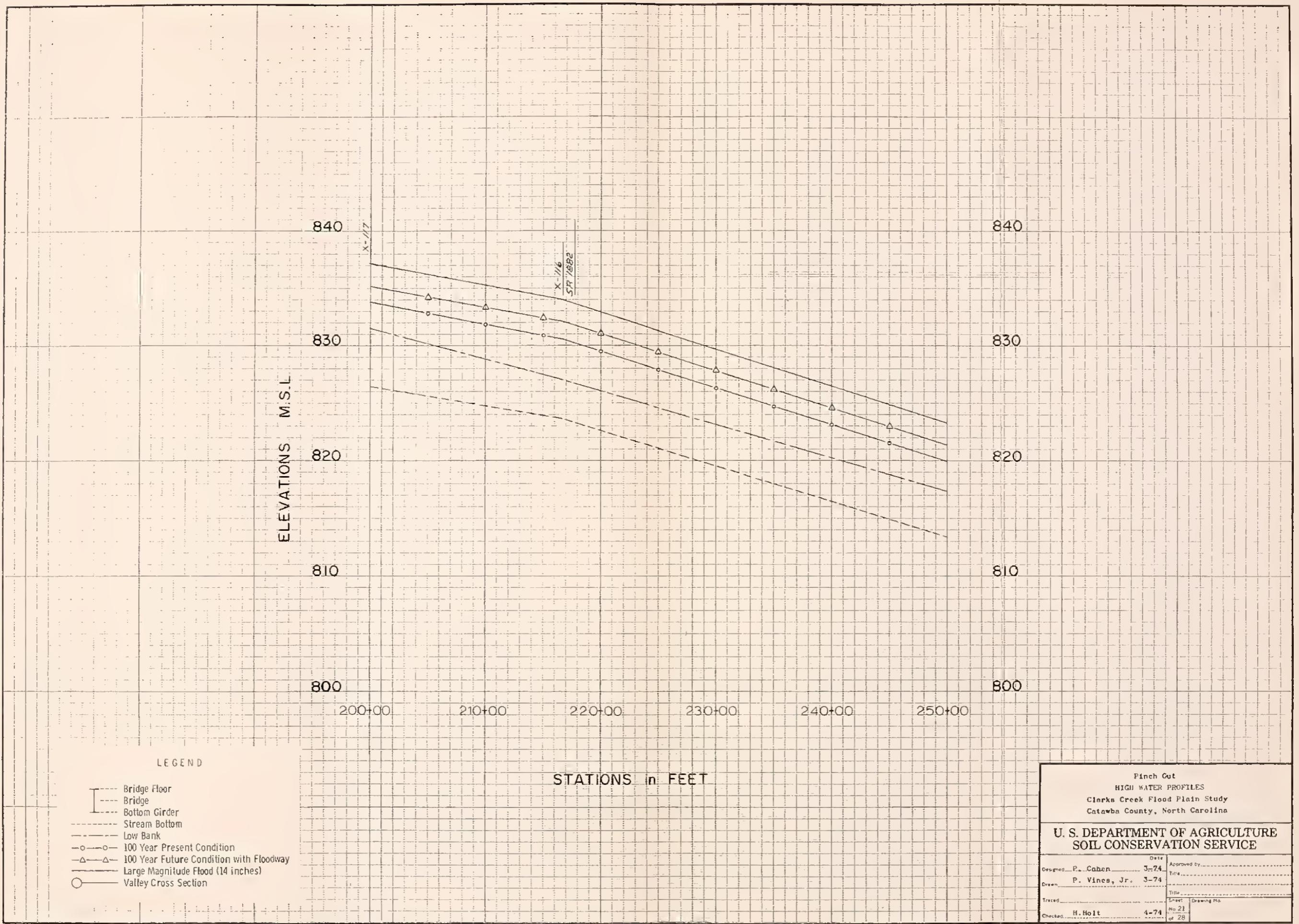
Old Mountain Creek

Pinch Gut
HIGH WATER PROFILES
Clarks Creek Flood Plain Study
Catawba County, North Carolina

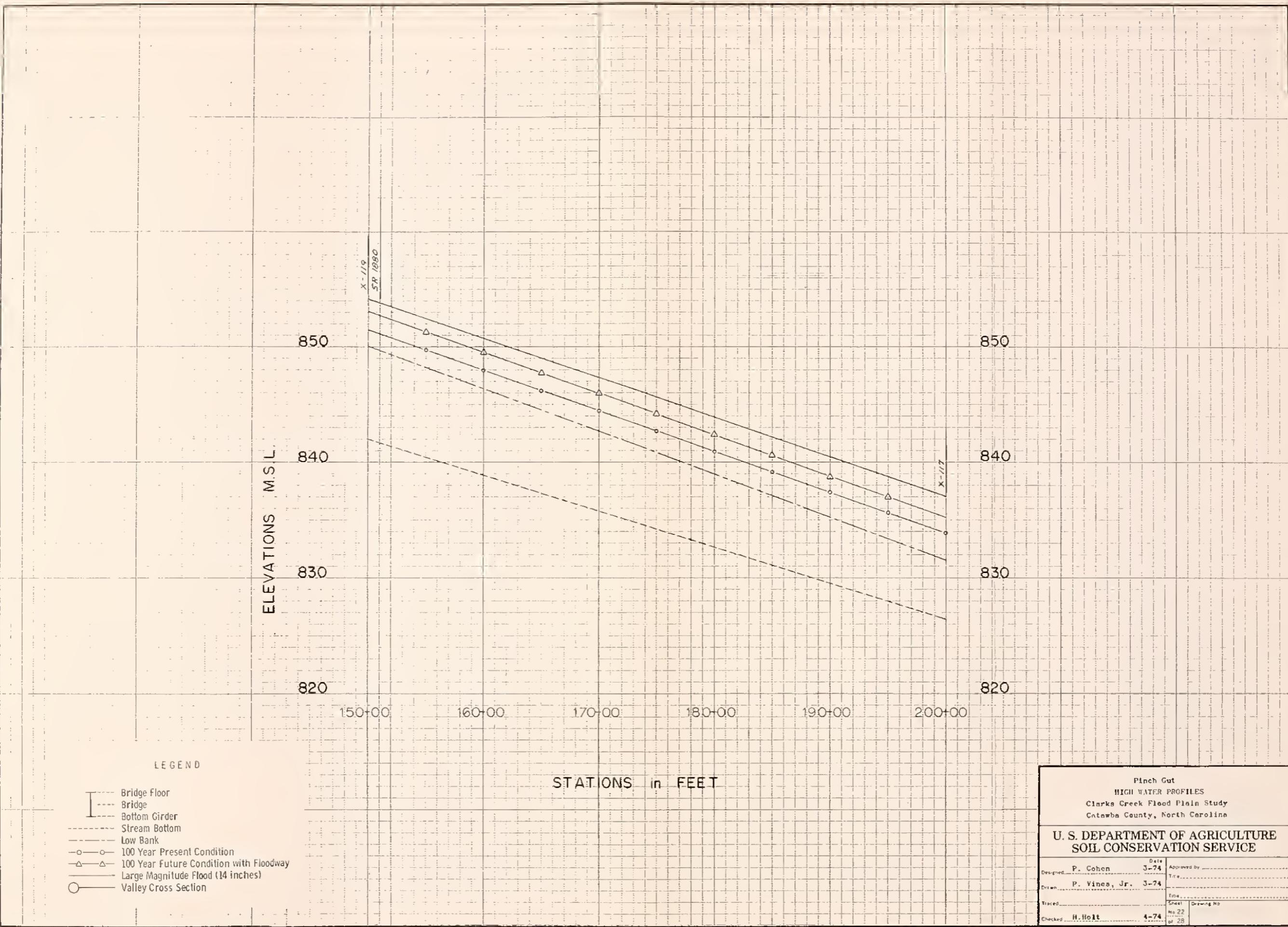
U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

Designed...	P. Cohen	3-74	Approved by...
Drawn...	P. Vincas, Jr.	3-74	Date...
Traced...			Title...
Checked...	H. Holt	4-74	Sheet No. 20 of 28 Drawing No.

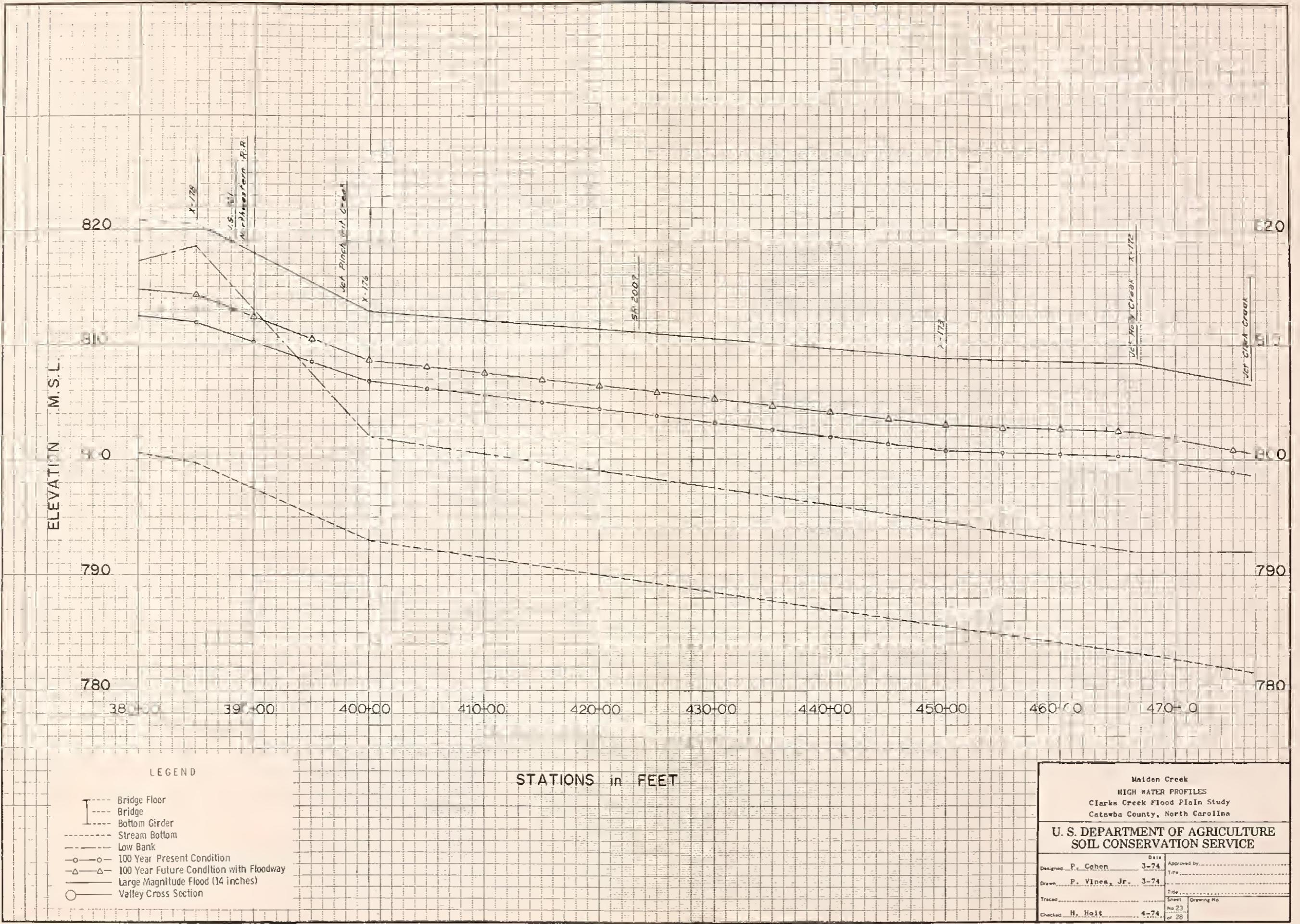




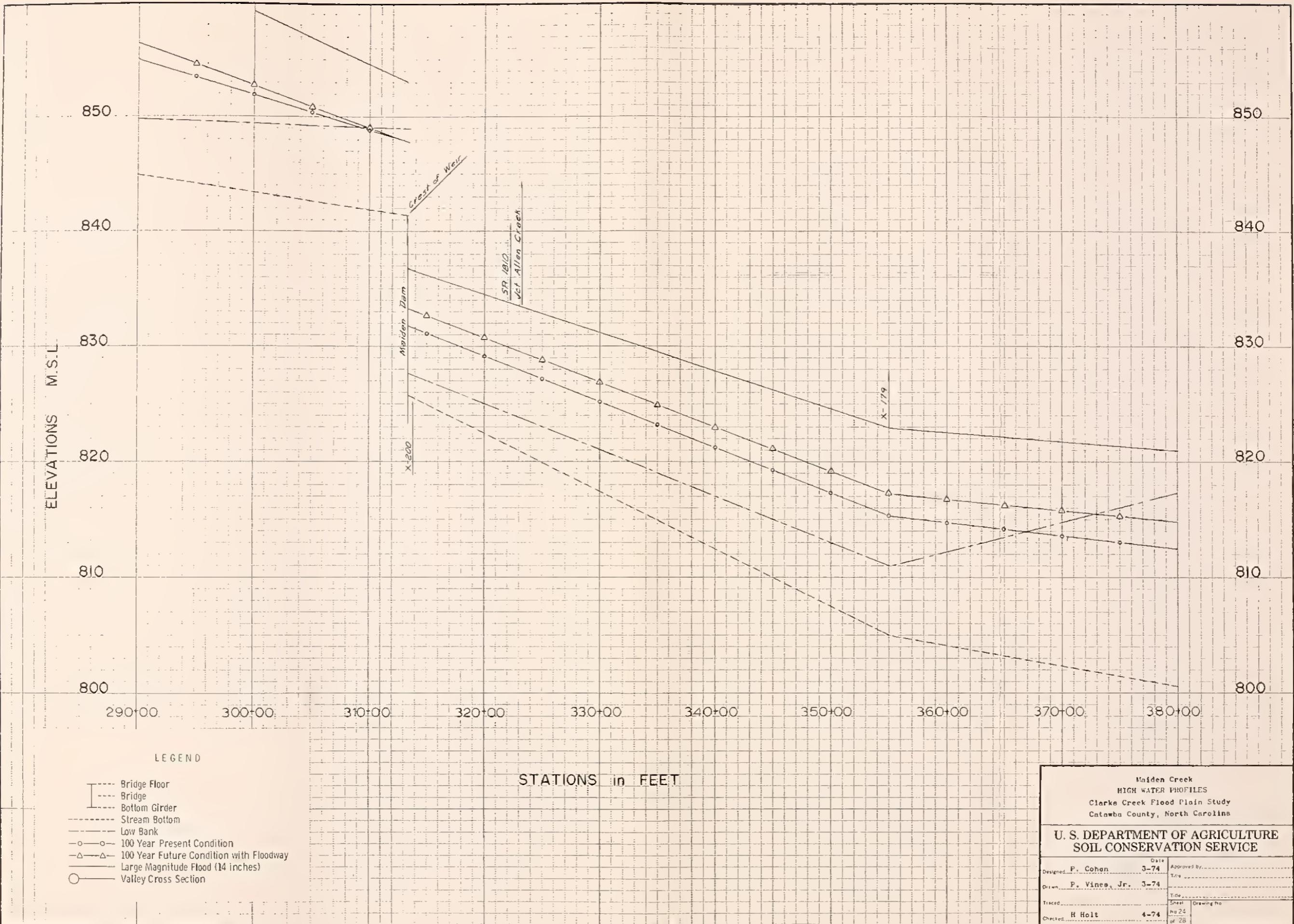




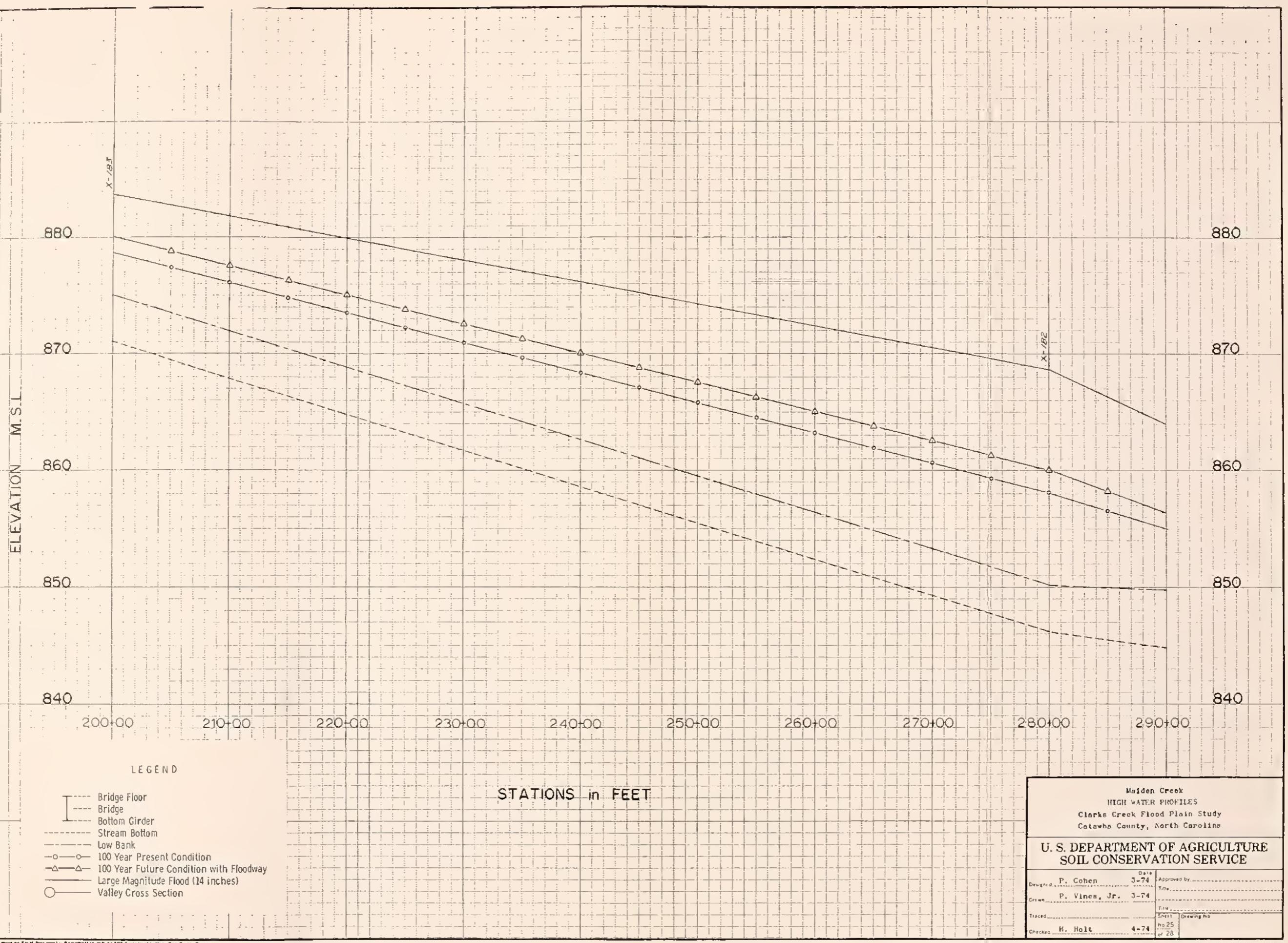




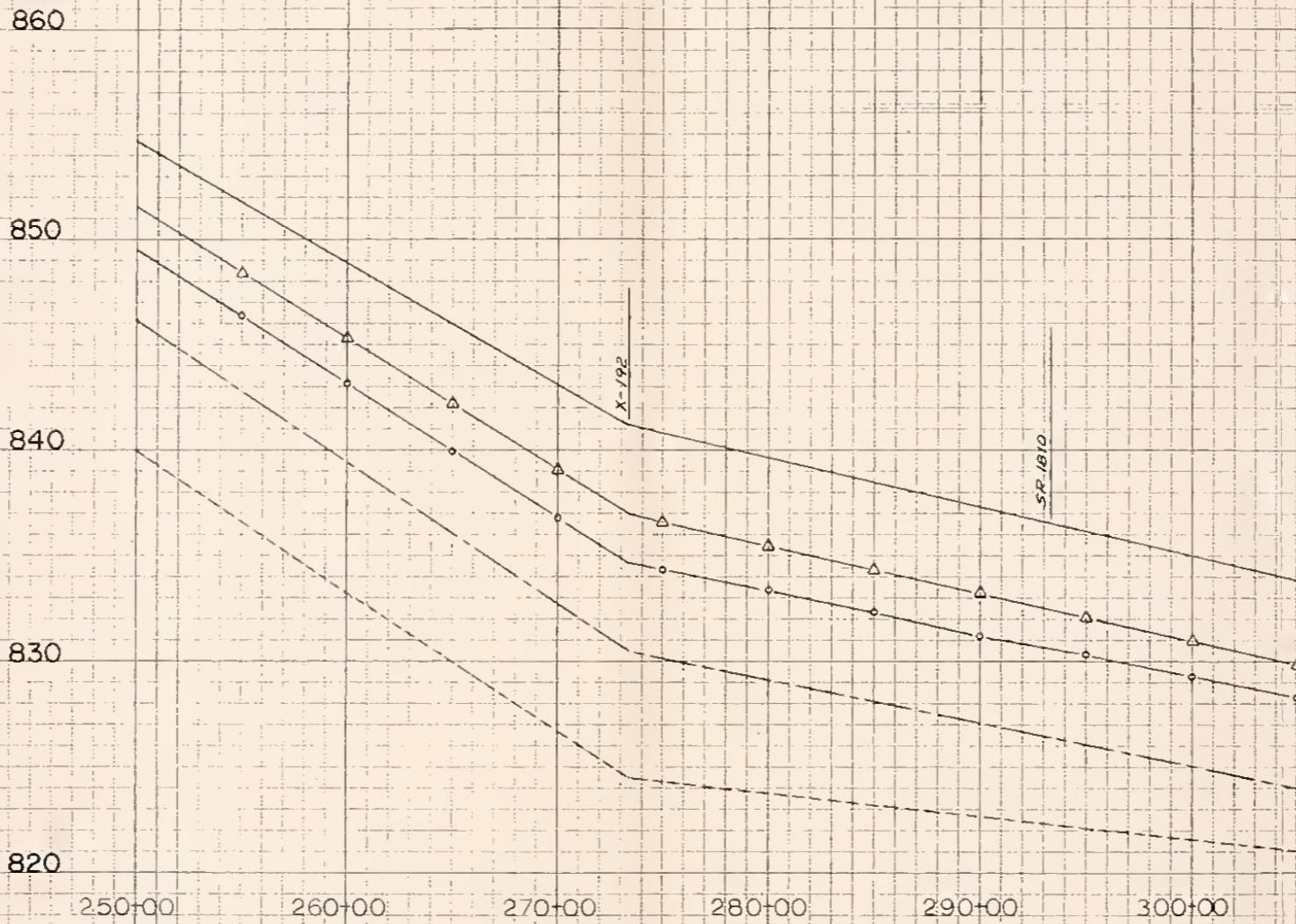








ELEVATIONS M.S.L.



LEGEND

- [Bridge symbol] Bridge Floor
- [Bridge symbol] Bridge
- [Bottom girder symbol] Bottom Girder
- [Stream bottom symbol] Stream Bottom
- [Low bank symbol] Low Bank
- 100 Year Present Condition
- △ 100 Year Future Condition with Floodway
- Large Magnitude Flood (14 inches)
- Valley Cross Section

STATIONS in FEET

Allen Creek
HIGH WATER PROFILES
Clarke Creek Flood Plain Study
Catawba County, North Carolina

U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE		
Designed	P. Coben	Date 3-74
Drawn	P. Vines, Jr.	Approved by _____ Title _____
Traced		Type _____
Checked	H. Holt	Sheet Drawing No. No. 26 of 28 4-74



ELEVATIONS M.S.L

880

870

860

850

840

830

200-00

210-00

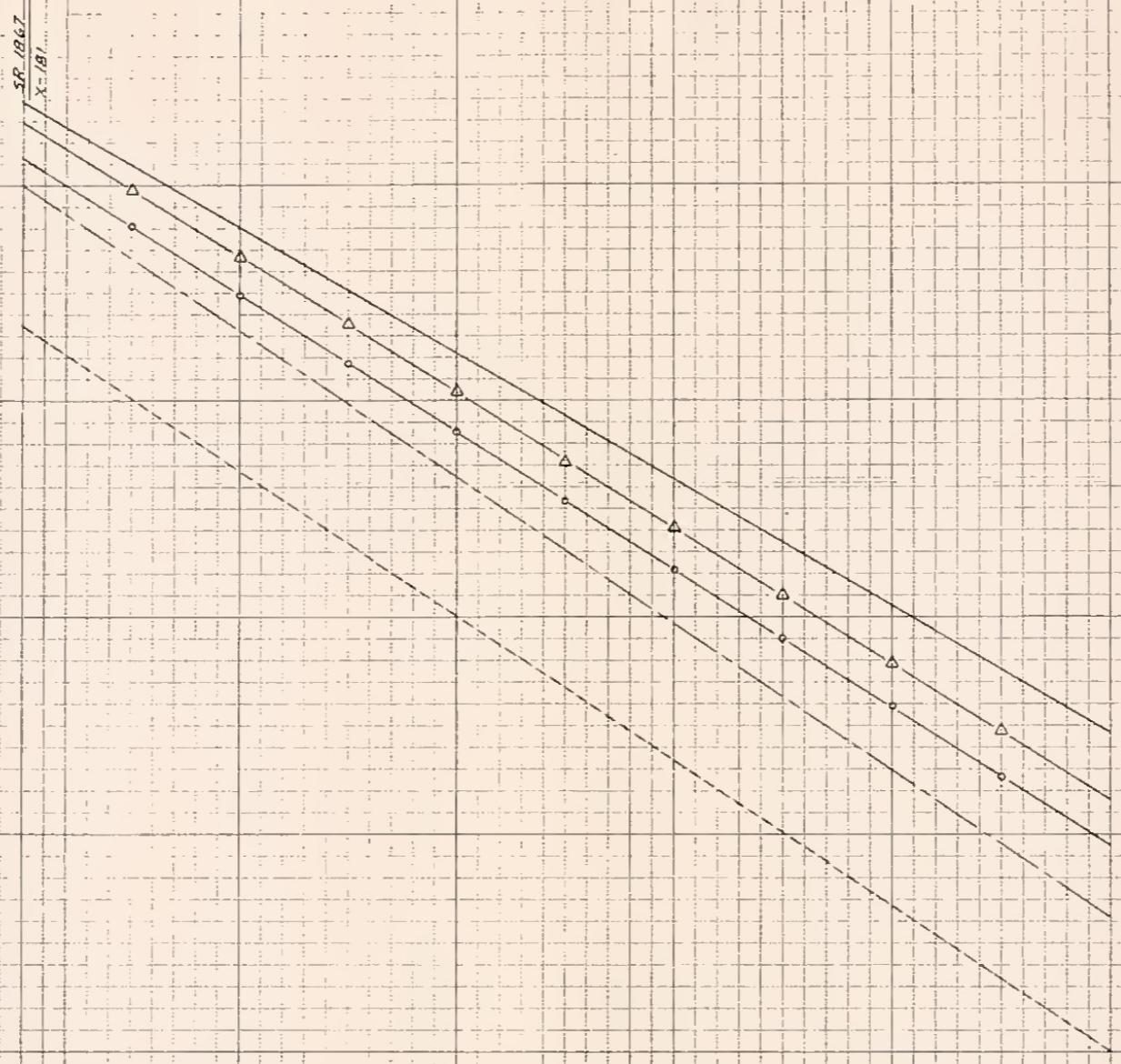
220-00

230-00

240-00

250-00

STATIONS in FEET



LEGEND

- Bridge Floor
- Bridge
- Bottom Girder
- Stream Bottom
- Low Bank
- 100 Year Present Condition
- △— 100 Year Future Condition with Floodway
- Large Magnitude Flood (14 Inches)
- Valley Cross Section

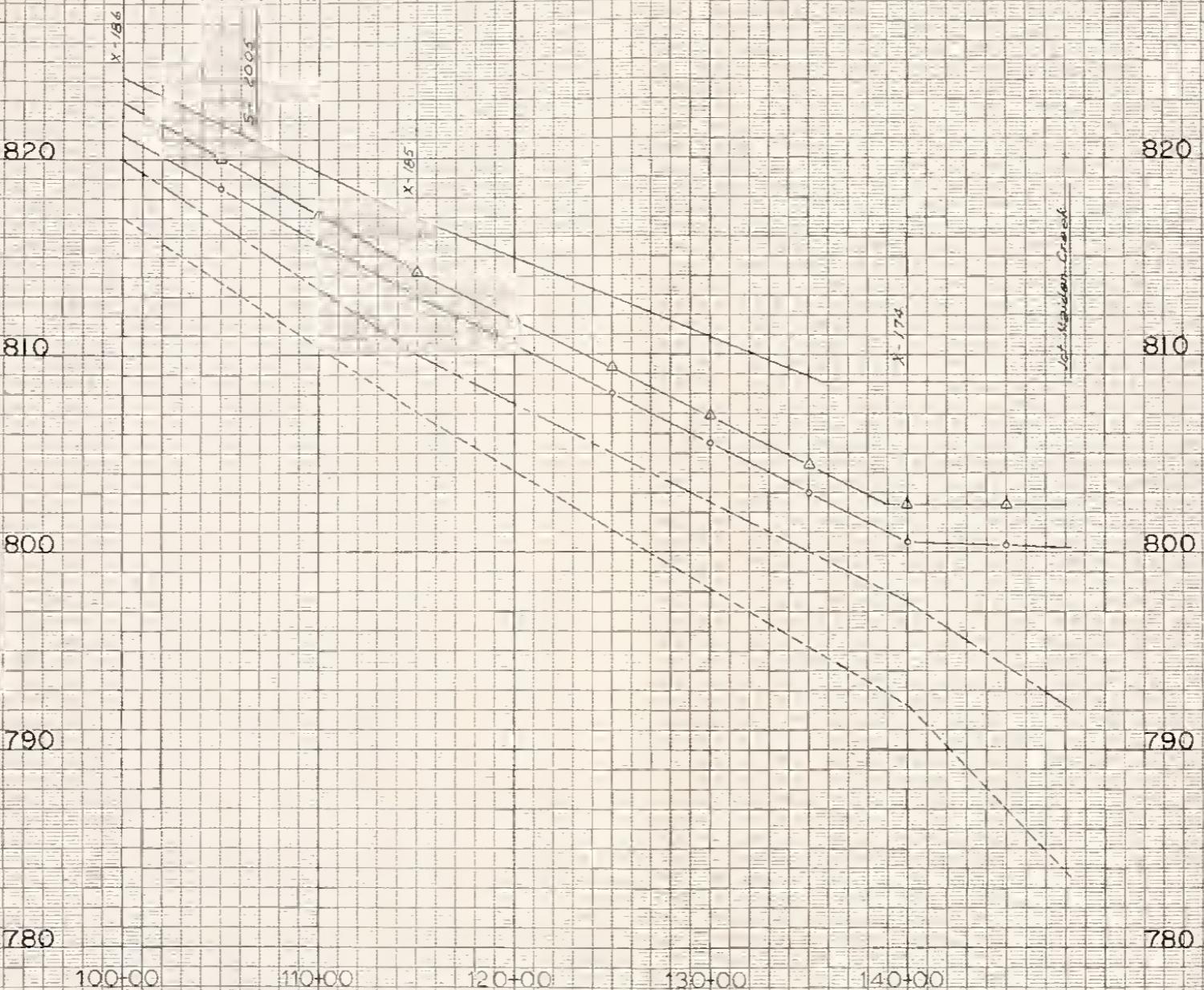
Allen Creek
HIGH WATER PROFILES
Clarks Creek Flood Plain Study
Catawba County, North Carolina

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

Design. P. Cohen	3-74	Approved by
Drawn P. Viney, Jr.	3-74	Date
Titled		Sheet No.
Checked H. Holt	4-74	Drawing No.
	No. 27	of 28



ELEVATIONS MSL



LEGEND

- Bridge Floor
- Bridge
- Bottom Girder
- Stream Bottom
- Low Bank
- 100 Year Present Condition
- △—△— 100 Year Future Condition with Floodway
- Large Magnitude Flood (14 inches)
- Valley Cross Section

Holly Branch
HIGH WATER PROFILES
Clarks Creek Flood Plain Study
Catawba County, North Carolina

U. S. DEPARTMENT OF AGRICULTURE		Date
SOIL CONSERVATION SERVICE		Approved by
Designed	P. Cohen	3-74
Checked	P. Vines, Jr.	3-74
Drawn		Title
Traced		
Checked	H. Holt	4-74
	No. 28	Drawing No.
	of 28	

